

AMERICA'S ENERGY REVOLUTION: A NEW PATH TO JOBS AND ECONOMIC GROWTH

HEARING BEFORE THE COMMITTEE ON THE BUDGET HOUSE OF REPRESENTATIVES ONE HUNDRED THIRTEENTH CONGRESS FIRST SESSION

HEARING HELD IN WASHINGTON, DC, JUNE 26, 2013

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WEDNESDAY, JUNE 26, 2013

HOUSE OF REPRESENTATIVES,
COMMITTEE ON THE BUDGET,
Washington, DC.

The Committee met, pursuant to call, at 10:00 a.m., in room 210, Cannon House Office Building, Hon. Paul Ryan, [chairman of the Committee] presiding.

Present: Representatives Ryan, Price, Garrett, McClintock, Lankford, Black, Flores, Rokita, Woodall, Blackburn, Walorski, Rice, Williams, Van Hollen, Schwartz, Pascrell, Ryan of Ohio, McDermott, Cicilline, Lujan Grisham, Huffman, Blumenauer, Schrader.

Chairman RYAN. Good morning, everyone. The hearing will come to order. Before we turn to our hearing, I would first like to recognize a very special person who has meant a lot to this Committee over the last 12 years. I would like to recognize Marsha Douglas, who will be retiring at the end of this week. Marsha served both sides of the aisle as our chief administrator for the past 12 years. And while Chris and I do not agree on everything; it is true. We do not agree on everything. We do agree on Marsha Douglas. Marsha, you have been such a phenomenal asset to this committee. Your institutional knowledge will be sorely missed. And on behalf of the entire committee, I want to wish you and your husband all the best in your upcoming retirement. Thank you, Marsha, appreciate it.

Chris?

Mr. VAN HOLLEN. Thank you, Mr. Chairman. And I just want to underscore what the Chairman said, that we are united on some things, and that is in our support for and respect for Marsha Douglas. And as you said, Mr. Chairman, she has done a great job helping members of this Committee on both sides of the aisle and our staff, and has been a professional throughout. And we really wish you the very best in your retirement. Congratulations.

Mr. PASCRELL. Mr. Chairman? Mr. Chairman, if I may.

Chairman RYAN. Sure.

Mr. PASCRELL. Mr. Chairman, Marsha is a reflection about the staff. And while we are talking about staff, Mr. Chairman, I implore you, I implore you and the Ranking Member to do everything you can. These staff members have not had a raise in over three years. And I do not think it is inappropriate or out of order to bring it up.

Chairman RYAN. It is, actually.

Mr. PASCRELL. No, let me continue.

Chairman RYAN. No, sorry. We are going to start with the hearing. I thought you were going to talk about Marsha.

Mr. PASCRELL. Just a point.

Chairman RYAN. No, the gentleman is not recognized to get into other issues. Thank you for your kind comments on Marsha.

Mr. PASCRELL. Oh, this is very much the issue, Mr. Chairman.

Chairman RYAN. Gentleman is out of order. That was off to a good start.

Good morning, everybody. I want to thank our witnesses. I want to thank Marty Durban, John Larson, and Dan Weiss for coming with us today. We are happy to have you, and we look forward to your testimony. This is a very important topic.

Now, energy is not really a big part of the federal budget. It is a huge part of the family budget. We feel the pinch every time we fill up our gas tank, every time we pay our heating bills. Fact is, energy is critical to our economy. And we cannot get out of this fiscal mess unless we have economic growth. And energy production fuels economic growth. It creates jobs, it increases wages, and it shrinks the deficit without raising taxes on anyone.

Energy production is one of the best tools we have to grow the economy and to pay down the debt. So today, we are going to learn more about it. The change has been swift. Thanks to new technology, we can tap resources long thought out of reach, and we can do it in an environmentally-responsible way. We can drill sideways and not just downward. We can break free deposits locked in hard, dense shale. And as a result, one study says our oil and natural gas reserves are over one-third larger than previously thought. We are already seeing the benefits. We are importing less oil, we are exporting more natural gas, and, most importantly, we are putting more people at work in America.

Take North Dakota. The Bakken shale has been home to an economic boom. Employment in the area has grown by over a third. The average pay has risen by over 50 percent to more than \$50,000, and all working families are benefitting, not just those in the energy sector. North Dakota is creating more jobs and better-paying jobs in fields like construction, transportation, and food services. One McDonald's is offering new hires a \$300 signing bonus. And the surge of production is lowering our energy prices. It is a boon for families, especially the poor.

The news from North Dakota is very encouraging. I wish I could say the news from Washington was the same. While production on state and private lands is up since 2009, production on federal lands is down. Now it is true that production is higher than it was in the last year of the Bush administration. But let's take a very close look at these numbers. In 2008, production on federal lands was rising. We were ramping up production, as we had been for years. Then, in 2009, President Obama took office, and he hit the brakes. He started taking federal lands offline and slowly decreasing their output. By 2011, his policies began to take effect.

Ever since then, production on federal lands has been falling. The private sector is moving full steam ahead, but the president, he is keeping his feet firmly on the brakes. It is not just an accident. Just yesterday, the president announced yet another attempt

to limit energy production. In fact, one of his advisors recently called for a, quote, “war on coal,” end quote. The way the president seems to see it, we can do better only if some of us do worse. While, if you ask me, the president’s proposal is a solution in search of a problem.

This Administration seems intent on picking winners and losers in the energy sector. It wants to subsidize its favorite industries, and it wants to regulate others out of existence. But we should support working families’ livelihoods. We should not obstruct them. And there are some concrete steps that we can take. Number one: We should open more federal lands to production. Number two: We should shorten the wait time for drilling permits. Number three: We should speed up the approval of a process for natural gas exports. Number four: We should resist the calls to impose punitive taxes on energy production. If we take these steps, we can help lower energy costs for working families. We can expand paychecks. We can reduce our reliance on foreign oil. Think of what that would do for our foreign policy challenges. And, finally, we can make a serious dent in the deficit. That is what matters here in the budget committee.

Mr. Larson’s company, IHS, has estimated that shale, oil, and gas production will increase government revenues at all levels, local, state, and federal, hear this, by \$2.5 trillion between 2012 and 2035. Think about that.

I am especially interested in hearing your thoughts on how energy production will help the federal budget in particular. This is an historic opportunity. It presents a basic choice. Do we let the energy revolution take its course, or do we cut it short?

We have it right in front of us. It could do wonders for our economy, wonders for families. The fact is we can grow the economy right now, without raising anyone’s taxes, without increasing spending, without writing new regulations, if we just let working families do their job and get these jobs. That is the course we should take. With that, I would like to recognize the ranking minority member, Mr. Van Hollen, for any comments you might have.

[The prepared statement of Chairman Ryan follows:]

PREPARED STATEMENT OF HON. PAUL RYAN, CHAIRMAN, COMMITTEE ON THE BUDGET

Good morning, everybody. To start, I want to thank our witnesses: Marty Durbin, John Larson, and Dan Weiss. We’re happy to have you. And we look forward to your testimony.

Energy isn’t a big part of the federal budget. But it’s a huge part of the family budget. We feel the pinch every time we fill up a tank of gas. The fact is, energy is critical to our economy. We can’t get out of this fiscal mess without economic growth. And energy production fuels economic growth. It creates jobs. It increases wages. And it shrinks the deficit—without raising taxes on anyone. Energy production is one of the best tools we have to grow the economy—and to pay down the debt. So today, we’re going to learn more about it.

The change has been swift. Thanks to new technology, we can tap resources long thought out of reach. And we can do it in an environmentally responsible way. We can drill sideways—not just downward. And we can break free deposits locked in hard, dense shale. As a result, one study says our oil and natural-gas reserves are over one-third larger than previously thought. We’re already seeing the benefits: We’re importing less oil. We’re exporting more natural gas. And most importantly, we’re putting more people to work.

Take North Dakota. The Bakken Shale has been home to an economic boom. Employment in the area has grown by over a third. The average pay has risen by over 50 percent—to more than \$50,000. And all working families are benefiting—not just

those in the energy sector. North Dakota is creating more jobs—and better-paying jobs—in fields like construction, transportation, and food services. One McDonald's is offering new hires a \$300 signing bonus. And the surge in production is lowering energy prices. It's a boon for all families, especially the poor.

The news from North Dakota is very encouraging. I wish I could say the same for Washington. While production on state and private lands is up since 2009, production on federal lands is down. Now, it's true that production is higher than it was in the last year of the Bush administration. But let's take a close look at the numbers.

In 2008, production on federal lands was rising. We were ramping up production—as we had been for years. Then, in 2009, President Obama took office—and he hit the brakes. He started taking federal lands offline—and slowly decreasing their output. By 2011, his policies began to take effect. Ever since then, production on federal lands has been falling. The private sector is moving full-steam ahead. But the President is keeping his feet firmly on the brakes.

It's not an accident. Just yesterday, the President announced yet another attempt to limit energy production. In fact, one of his advisers recently called for a quote, "war on coal." The way the President sees it, we can do better only if some of us do worse. Well, if you ask me, the President's proposal is a solution in search of a problem. This administration seems intent on picking winners and losers. It wants to subsidize its favored industries—and regulate others out of existence. But we should support working families' livelihoods. We shouldn't obstruct them.

And there are some concrete steps we should take. Number one, we should open more federal lands to production. Number two, we should shorten the wait time for drilling permits. Number three, we should speed up the approval process for natural-gas exports. And number four, we should resist calls to impose punitive taxes on energy companies. If we take these steps, we can help lower energy costs for working families. We can reduce our reliance on foreign oil.

And finally, we can make a serious dent in the deficit. Mr. Larson's company, IHS, has estimated that shale-oil and gas production will increase government revenue at all levels—local, state, and federal—by \$2.5 trillion between 2012 and 2035. I'm especially interested to hear your thoughts on how energy production will help the federal budget in particular.

This is a historic opportunity. And it presents a basic choice: Do we let the energy revolution take its course? Or do we cut it short? The fact is, we can grow the economy—right now—without raising anyone's taxes, without increasing spending, without writing new regulations—if we just let working families do their job. That's the course we should take.

With that, I recognize the ranking member, Mr. Van Hollen, for his opening remarks.

Mr. VAN HOLLEN. Thank you, Mr. Chairman. I want to join the Chairman in welcoming all of our witnesses today to talk about this very important issue of our energy future, and its impact on the economy and job growth. I should say at the outset that the most immediate measure that this Committee and this House could take right now to eliminate the drag on the economy is to replace the sequester. And we have tried now eight times to get a vote to do just that. The Congressional Budget Office predicted that, as a result of the sequester, we will see 750,000 fewer American jobs by the end of this calendar year. That is a self-inflicted wound. It should be unacceptable to all of us. We should go to conference, as the law says, and start resolving those issues right now.

Now the future of energy production in this country is a huge opportunity, and that is why the president has put forward his all-of-the-above energy strategy to focus on all homegrown American energy sources. So let's look at the facts. U.S. oil production is at its highest level since 1992. The Energy Information Administration has shown that the annual oil production from federal lands and waters has been higher every year under President Obama than the last year of the previous administration. And we are seeing a revolution in this country of natural gas production. Federally-supported technology and the ingenuity of the technology com-

munity has helped our businesses drill more effectively and extract more natural gas. In just seven years, U.S. natural gas production has increased 27 percent.

We have seen the first two nuclear reactors in a generation approved in February 2012. And as a result of federal and state policies, and the ingenuity of the private sector, we have seen a dramatic jump in the production of renewable energy. In just the last four years, we have doubled the amount of electricity generated from the wind and the sun. The Bureau of Labor Statistics estimates that in 2011, there were 3.4 million clean energy jobs, an increase of 158,000 from the year before. Those are jobs manufacturing wind turbines, installing solar panels, and other jobs in that sector.

Now many of our Republican colleagues say they want to have an all-of-the-above energy strategy, but what they are really calling for, in most instances, is a fossil-fuels-only approach. And that was reflected in the fact that their presidential candidate in the last election opposed federal incentives for the production of wind energy. A lot of governors from a lot of those states, like the governor of Iowa and others, said it was important for jobs in their states. But the position taken at the federal level by many of our colleagues is no to federal investments in clean energy policy.

And, in fact, if you look at the budget of our Republican colleagues, they are slashing by 50 percent important national investments in clean energy technologies. That is not an all-of-the-above energy strategy; that is a status quo energy strategy. And it is incredibly short-sighted for two reasons. One is it totally ignores the costs of doing nothing when it comes to global climate change. We know there are huge costs attached to that. Just ask the insurance companies. We see a greater frequency and intensity of major weather events, whether they are droughts, whether they are forest fires as a result of the droughts, whether they are floods; a whole series of events that have a price. And so doing nothing in that area has a cost.

Secondly, our major economic competitors, countries like China, countries like Germany, recognize the importance of investing in clean energy technologies as an important market globally for the future. And right now, the Chinese are investing more in that sector than we are.

I believe, as do hundreds of American businesses who recently signed a statement saying that the United States should rise to the occasion and challenge that dealing with global climate change is, at the same time, a huge economic and jobs opportunity for the United States. And we should not shy away from that challenge. And that is why we should, Mr. Chairman, adopt what is truly an all-of-the-above energy strategy to develop responsibly homegrown energy sources, and, at the same time, make better use of the energy we have by taking steps to prevent wasteful practices. And by doing that, we can make sure that the energy we do produce goes further, and, at the same time, increase jobs and save consumers a lot of money.

So, Mr. Chairman, I hope we will, going forward, change at least what has been the pattern in this House of Representatives, and

truly focus on all those energy sources, not simply a one-dimensional fossil fuel strategy. Thank you.

[The prepared statement of Mr. Van Hollen follows:]

PREPARED STATEMENT OF HON. CHRIS VAN HOLLEN, RANKING MEMBER,
COMMITTEE ON THE BUDGET

Thank you, Mr. Chairman.

And I want to join the Chairman in welcoming all of our witnesses today to talk about this very important issue of our energy future and its impact on the economy and job growth.

I should say at the outset that the most immediate measure that this Committee, and that this House, could take right now to eliminate the drag on the economy is to replace the sequester. And we have tried now eight times to get a vote to do just that. The Congressional Budget Office predicted that, as a result of the sequester, we will see 750,000 fewer American jobs by the end of this calendar year. That's a self-inflicted wound that should be unacceptable to all of us. We should go to conference as the law says, and we start resolving those issues right now.

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We have seen the first two nuclear reactors in a generation approved in February 2012. And as a result of federal and state policies and the ingenuity of the private sector, we have seen a dramatic jump in the production of renewable energy. In just the last four years, we have doubled the amount of electricity generated from the wind and the sun. The Bureau of Labor Statistics estimates that in 2011 there were 3.4 million clean energy jobs—an increase of 158,000 from the year before. Those are jobs manufacturing wind turbines, installing solar panels, and other jobs in that sector.

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Secondly, our major economic competitors—countries like China, countries like Germany—recognize the importance of investing in clean energy technologies as an important market globally for the future. And right now, the Chinese are investing more in that sector than we are.

I believe, as do hundreds of American businesses who recently signed a statement saying that the United States should rise to the occasion and challenge, that dealing with global challenge is at the same time a huge economic and jobs opportunity for the United States. And we should not shy away from that challenge.

And that is why we should, Mr. Chairman, adopt what is truly an all-of-the-above energy strategy to develop responsibly homegrown energy sources, and at the same time make better use of the energy that we have by taking steps to prevent wasteful practices. And by doing that, we can make sure that the energy that we do produce goes further, and, at the same time, increase jobs and save consumers a lot of money.

So, Mr. Chairman, I hope we will, going forward, change at least what has been the pattern in this House of Representatives and truly focus on all of those energy sources, not simply a one-dimension fossil fuel strategy.

Thank you.

Chairman RYAN. Thank you. We will proceed in the order in which we see. We will go with Mr. Larson, Mr. Weiss, and Mr. Durbin. I would ask each of you, if you do not mind, to summarize your testimony in five minutes so we can get to the questions, and your full testimony will be included in the records. So, Mr. Larson, the floor is yours.

**STATEMENT OF JOHN W. LARSON, VICE PRESIDENT,
ECONOMICS AND COUNTRY RISK, IHS**

Mr. LARSON. Thank you, Chairman Ryan, Ranking Member Van Hollen, and distinguished members of the Committee on the Budget. It is an honor to speak with you today. I think as an economist, this is one of the areas when I talk about what is going on in the broader U.S. economy, that we really get to get excited about the opportunities that are out there today. The United States is clearly in the midst of an unconventional revolution of oil and gas that is fundamentally changing our energy position in the world. It is improving global competitiveness for the United States, and it is helping to stimulate a manufacturing renaissance.

Since 2009, our company, IHS, has engaged in several studies to better understand the economic contributions associated with this revolution. And we will be releasing a further study in July that looks at the specific implications for the manufacturing sector. However, the impacts that we have quantified so far are impressive. At a national level, this unconventional exploration and development activities supports 1.7 million jobs in 2012. And by the end of the decade, that will grow to 3 million jobs.

In the process, it is also generating significant government revenues. Nearly \$62 billion in total government revenues are for federal, state, and local in 2012. That will grow to \$111 billion in annual revenues by the end of the decade. And as Chairman Ryan, you pointed out, that will accumulate from 2012 to 2035 to \$2.5 trillion in government, federal, state, and local revenues.

There are also significant implications for states as well. In fact, nearly 1.1 million jobs and \$19 billion in state and local taxes can be found in the 21 states represented by the members of this very Committee. And states do not necessarily have to have a play within their geographic boundaries to enjoy these economic opportunities. The benefit is recognized through a very long supply chain that supports this unconventional activity. In fact, nearly 30 percent of the jobs identified in our study were in states with no appreciable unconventional activity.

For example, in Wisconsin, an important supplier of sand and machinery to the unconventional industry, Wisconsin, in 2012, enjoyed 20,000 jobs and \$330 million in state and local taxes due to this unconventional activity. Similarly, in Maryland, a state with long supply chains that also support this activity, there were 12,000 jobs and more than \$240 million in taxes and revenue. And lastly, in New York, a state which currently bans unconventional activity, these supply chains supported 44,000 jobs and \$1 billion

in state and local taxes, particularly in areas like real estate, finance, and insurance.

Equally impressive for the larger macroeconomic effects attributed to the savings brought about by lower natural gas prices and corresponding electricity prices. In our study, we identified how these lower natural gas prices will increase industrial production 2.7 percent by 2015, and 4.7 percent by 2035, as manufacturing industries that are energy-intensive take advantage of our comparative advantage.

And these have real pocketbook effects on average American families, as they enjoy these lower prices, which cascade through the economy, resulting in savings to consumers in annual disposable income, which will be up \$1,000 by 2015, with approximately 121 million American households; the savings of \$1,000 per average household equates to \$121 billion in aggregate savings to those households.

Where does this mean for manufacturing specifically? Well, there are several factors that are contributing to the shift in the delicate balance in favor of onshoring and fueling the resurgence of manufacturing. First, the global wage rate for many offshoring locations have significantly outpaced U.S. wage increases and narrowed the gap, making the United States more competitive on a per-hour basis. Second, in an increasingly-advanced manufacturing world, technology is shifting the balance away from the importance of low-cost labor and towards high-skilled work forces, which the U.S. enjoys a comparative advantage in. And third, a rapidly evolving energy landscape is fundamentally shifting traditional economics around supply chains.

Higher oil prices, which have tripled in the last decade, have significantly increased transportation costs, making offshoring less attractive. In the U.S., unconventional revolution is creating significant competitive advantages for energy-intensive industries, and industries that rely upon natural gas derivatives and feedstocks. And as a result, companies are now committing or planning to commit to hundreds of billions of dollars in new investments in this country, both domestic and foreign direct investment.

Although this unconventional revolution has already had a major impact, fundamentally transforming U.S. energy supply and contributing to the growth in government revenues, manufacturing, and the wider economy, its significance will continue to grow as it continues to unfold. These hearings provide a timely opportunity for assessing that impact and significance in its many dimensions. And I am pleased to respond to the Committee's questions. Thank you.

[The prepared statement of Mr. Larson follows:]

PREPARED STATEMENT OF JOHN W. LARSON, VICE PRESIDENT,
ECONOMICS AND COUNTRY RISK, IHS¹

Chairman Ryan, Ranking Member Van Hollen and distinguished members of the Committee on the Budget, it is an honor to speak with you today about America's new opportunity—the economic growth and employment being fueled by our country's unconventional energy revolution.

¹John Larson is the Vice President and global leader for customized analytic and economic solutions within IHS Economics & Country Risk Group.

The United States is in the midst of an unconventional revolution in oil and gas that, it becomes increasingly apparent, goes beyond energy itself. Since 2009, our company has engaged in several studies to better understand and accurately quantify the dramatic economic contributions associated with this unconventional revolution. Today, the exploration and production industry driving this unconventional revolution supports 1.7 million jobs across a vast supply chain—a considerable accomplishment given the relative newness of the technology. That number could rise to 3 million by 2020. In 2012, this revolution added \$62 billion to federal and state government revenues, a number that we project could rise to about \$111 billion by 2020.² What is now becoming clear is that the lower costs of energy brought about by this abundant growth in energy supply is helping to stimulate a manufacturing renaissance and improve the competitive position of the United States in the global economy and further stimulating job creation in the United States.

WHERE DID THE UNCONVENTIONAL REVOLUTION COME FROM?

The unconventional revolution has unfolded rapidly. As recently as just a half-decade ago it was widely assumed that a permanent era of energy shortage was at hand. The country, it seemed, was on a path to spending several hundreds of billions of dollars more every year on imports to meet oil and natural gas demand. How different things look today.

US crude oil output, after a nearly 40 year decline, has increased dramatically—by 46 percent since 2008.³ Net petroleum imports have fallen from 60 percent of total consumption in 2005 to 36 percent in the first four months of 2013. The decline is due, in part, to moderating energy demand during the slow recovery in the wake of the Great Recession. Greater fuel efficiency in autos and a slowing of the growth in total vehicle miles will continue to constrain the growth of demand. However, the decline in imports has also been achieved through significant supply side changes resulting from that dramatic increase in U.S. oil production. The largest element of this increase in production comes from what has become the newest major advance in energy development: tight oil. In fact, oil imports in 2012 would have cost the United States around \$70 billion more and increased our trade deficit a little over 13 percent were it not for the increase in production capacity brought about by tight oil since 2008.

With respect to natural gas, in just seven years, US natural gas production has risen from 51 billion cubic feet (bcf) per day to 66 bcf per day—a 27 percent increase. This rapid rise was driven primarily by shale gas production. In 2000, shale gas accounted for just 2 percent of total natural gas production. Today, shale gas accounts for nearly 44 percent of total natural gas production. This rapid rise in unconventional production has also enhanced US energy security. Five years ago, due to constrained production, the United States seemed locked into importing increasing amounts of liquefied natural gas (LNG) and was heading towards spending as much as \$100 billion dollars annually on future imports. Now, these newly unlocked resources ensure that the United States will need, at most, minimal LNG imports to balance supply with demand. Instead of debates over US imports, there is the prospect of exporting some of the domestic surplus, as well as the potential for using natural gas in some classes of vehicles.

WHAT IS THE ECONOMIC IMPACT OF THE UNCONVENTIONAL OIL AND GAS REVOLUTION?

While various states had begun to home in on the economic development aspects of shale gas and tight oil, it was only in last several years that its significance for the national economy started to come into focus. We have undertaken a series of studies to assess the economic impact of the unconventional revolution. The first two—released late last year—examined the national and state-by-state impacts.⁴ We are now extending that study to assess the impact on manufacturing—which will be released in July, 2013.⁵

So far, this unconventional revolution is supporting 1.7 million jobs—direct, indirect, and induced. Looking towards the future, the industry will continue to contribute to strong job growth bringing the total to 3 million workers by the end of

²IHS, America's New Energy Future: the Unconventional Oil and Gas Revolution and the United States Economy, vol. 1 National Economic Contributions (October 2012) and vol. 2, State Economic Contributions (December 2012).

³Energy Information Administration, Monthly Energy Review (May 2013).

⁴IHS, America's New Energy Future: the Unconventional Oil and Gas Revolution and the United States Economy, vol. 1 National Economic Contributions (October 2012) and vol. 2, State Economic Contributions (December 2012).

⁵IHS, America's New Energy Future: the Unconventional Oil and Gas Revolution and the Manufacturing Renaissance, vol. 3 (July 2013)

this decade. At a time of great concern about the federal budget, it is also important to note the important revenue implications associated with this energy revolution. Total revenues flowing to governments from unconventional activity amounted to \$62 billion last year and will rise to \$111 billion by 2020. This does not include revenue from traditional oil and gas activity. By 2035, unconventional activity is expected to have generated nearly \$2.5 trillion in cumulative government revenues since 2012.

It is also notable that, owing to the long supply chains, the job impacts are being felt across the United States, including in states without significant shale gas or tight oil activity.⁶ That is to say, when it comes to unconventional activity, a state does not need to have a major unconventional play within its geographic boundaries to benefit economically from the activity. In fact, nearly 30 percent of all jobs associated with the unconventional energy revolution are found in states with no appreciable unconventional activity. For example:

- Wisconsin is an important supplier of the special sands required in unconventional extraction using hydraulic fracturing techniques. Machinery manufacturers in the state also provide significant oil and gas field machinery to the unconventional activity around the country. As a result, in 2012 Wisconsin's economic activity associated with unconventional production directly and indirectly supported nearly 20,000 jobs and generated \$330 million in state and local taxes.

- In Maryland, the 2012 economic activity associated with unconventional activity indirectly supported nearly 12,000 jobs while generating more than \$240 million in taxes for state and local governments.

- In New York, a state that currently bans unconventional activity, 44,000 jobs along with \$1 billion in state and local taxes can be attributed to activities supporting the supply-chain associated with shale gas and tight oil in other states across the country in 2012.

A key reason for the profound economic impact of the unconventional activity is the fact that it combines a capital-intensive industry with a broad domestic supply chain. The United States is a leader in all aspects of the unconventional industry, which means that most of its suppliers are domestically-based, and that means a larger portion of the dollars spent are supporting domestic jobs in trucking, steel fabrication, aggregates, heavy equipment manufacturing, hotels, housing, and restaurants, among others.

But there is now an even bigger positive impact for our economy that is beginning to be recognized. In addition to these specific contributions to the economy, there are larger macroeconomic effects attributed to the savings brought about by lower natural gas prices and corresponding electricity prices. In our study, *The Economic and Employment Contributions of Shale Gas in the United States*, we identified the following two important macro-economic implications stemming from lower natural gas prices:

- For U.S. based industries, the abundance of affordable natural gas means lower input and feedstock prices. As a result, industrial production—the measure of output from manufacturing, mining, and utility industries—will increase 2.7 percent by 2015 and 4.7 percent by 2035.

- For households, these lower prices cascade through the economy, resulting in a \$926 increase in annual average disposable income between 2012 and 2015. By 2035, annual average disposable income per household will have increased by more than \$2,000.

MANUFACTURING RENAISSANCE?

The impact on manufacturing is notable. Several factors are shifting the economics in favor of on-shoring and fueling the resurgence of manufacturing in the US. First, global labor wage rates for many off-shoring locations have significantly outpaced US wage increase, narrowing the wage gap. Second, in an increasingly advanced manufacturing world, technology is shifting the balance away from the importance of low cost labor toward higher skilled workforces. Third, a rapidly evolving energy landscape is fundamentally shifting the traditional economics around supply chains as:

⁶Producing states are defined as those that are part of the 20 largest unconventional oil and natural gas producing plays in the US Lower 48, such as the Bakken and Marcellus Shale plays. Non-Producing states are not part of the 20 largest unconventional oil and natural gas producing plays in the US Lower 48 and are not part of an emerging oil or natural gas play in the 2012 to 2035 forecast horizon. These states may be part of plays that are currently producing oil and/or natural gas, but nevertheless are classified as non-producing states, because current production is relatively small and the prospect for future unconventional production is unknown.

(1) higher oil prices, which have tripled in the last decade, are altering transportation costs and compelling companies to site manufacturing locations closer to end markets making off-shoring less attractive;

(2) the unconventional revolution in the US, which has ushered in a new era of affordable and abundant domestic natural gas, is creating significant competitive advantages for both energy intensive industries and industries that rely upon natural gas derivatives as critical feedstock to production.

As a result, companies are now committing or planning investments that in total appear to range into hundreds of billions of dollars.⁷ The US chemical industry is particularly well positioned to capitalize on the benefits of this unconventional revolution. This industry is highly energy intensive using energy inputs, mainly natural gas and natural gas liquids, as both the major fuel source and feedstock. The US chemical industry's feedstock prices are now among the lowest in the world. As a result, the US is gaining a decisive competitive advantage in the cost of producing basic petrochemicals like ethylene, ammonia, methanol, and their downstream derivative products.

A large number of chemical companies, for instance, have announced plans to build or expand facilities in North America with capital expenditures totaling close to \$100 billion.⁸ Will all be built? Time will tell. But what is striking is that, just five years ago, these companies would have scoffed if they had been told that they would be investing back into the United States. The investments are coming both from US based companies, which are "on-shoring" in response to lower energy costs, and from foreign companies. Examples include:

- General Electric which has announced more than a dozen new manufacturing plants or expansions of existing facility including: (1) a locomotive plant in Texas; (2) an aircraft engine composites factory in Mississippi; and (3) appliance and lighting facilities in Alabama, Kentucky, and Ohio.
- Caterpillar, which is investing \$120 million in a new Victoria, TX, plant to make excavator machines—these devices will replace excavators formerly manufactured at a Caterpillar facility in Japan and shipped to the US.
- Ford, which announced plans to bring back approximately 2,200 parts production jobs to the United States.

CONCLUSION

Altogether, the unconventional oil and gas revolution has already had major impact in multiple dimensions—beginning with U.S. energy supply and costs and now extending to government revenues, manufacturing, and the wider economy. Its significance will continue to grow as it continues to unfold. These hearings provide a very timely opportunity for assessing that impact and significance in its many dimensions, and I am pleased to respond to the committee's questions.

Chairman RYAN. Thank you. Right in time, too. Mr. Weiss.

STATEMENT OF DANIEL J. WEISS, SENIOR FELLOW, CENTER FOR AMERICAN PROGRESS

Mr. WEISS. Chairman Ryan, Ranking Member Van Hollen, and distinguished members of the Committee, thank you for the opportunity to testify today.

The subject of today's hearing is America's Energy Revolution: A New Path to Jobs and Economic Growth. To most Americans, the energy revolution has three main components. First, responsibly develop the energy resources of today while using them more efficiently. Second, invest in the new, cleaner energy technologies of tomorrow, and funding them with ending tax breaks for big oil companies. Third, reduce the public health and extreme weather threats posed by toxic and carbon pollution generated by the production and combustion of coal, oil, and natural gas.

I will briefly review the Obama Administration's all-the-above strategy that meets these three goals. First, responsibly develop

⁷ American Chemistry Council, Shale Gas, Competitiveness, and New U.S. Chemical Industry Investment—An Analysis of Announced Projects (May 2013)

⁸ IHS, Energy and the New Global Industrial Landscape: a Tectonic Shift? (January 2013), p. 2.

the resources of today. As the Chairman noted, U.S. oil production is at its highest since 1992. Oil production for federal lands and waters is higher three of the last four years under Obama than under the last three years of his predecessor. And the Congressional Budget Office says that 70 percent of the oil and gas on federal lands is already open for development. This oil production increases boosted direct oil and gas employment by 155,000 people, or 11 percent, over the last four years.

Because of the increase in domestic production, last year, the United States imported only 40 percent of its oil, compared to 57 percent in 2008. And coal mining jobs grew by 6 percent between 2008 and 2012, according to the Labor Department. And we are using these resources more efficiently. When the new fuel economy standards are fully implemented in 2025, we will use 2 million fewer barrels of oil per day, and drivers will save the equivalent of \$1 per gallon of gasoline. Under the Recovery Act, we weatherized one million low-income homes to make them more efficient, which will save each family \$400 on their utility bills every year.

Second, we need to invest in clean energy technologies that create jobs, and we could fund this by closing special oil tax breaks. As previously noted, the governors of Iowa, Oklahoma, and Kansas have supported federal investments in wind energy, which has led to growth in that field. Renewable electricity generation has doubled over the last four years, and there are 200,000 employees in the wind and solar industry. The Labor Department recently determined that in 2011, 3.4 million jobs were associated with the production of green goods and services. And we can pay for additional clean energy investments by the elimination of tax breaks for big oil. The five biggest oil companies made \$250 billion in profits in the last two years, and as of the end of 2012, had \$70 billion in cash reserves. They do not need their share of \$40 billion in tax breaks for big oil companies.

Third, we need to protect public health from pollution and extreme weather. The pollution reductions from the mercury air toxics standards for coal-fired power plants will save 11,000 lives annually, and prevent hundreds of thousands of asthma attacks and hospitalizations.

Yesterday, President Obama announced his plan to reduce carbon pollution from power plants by enforcing the Clean Air Act. Power plants are the largest uncontrolled domestic source of climate pollution. These reductions are essential to meet our obligation to the next generation to reduce the threats to public health and avoid the future growth of destructive extreme weather.

President Obama has successfully pursued an all-of-the-above energy strategy by increasing oil production, reducing oil imports and use, and protecting public health from pollution. In contrast, the House of Representatives has only supported one element of an all-of-the-above strategy: the expansion of oil and gas production. For instance, just last week the House Appropriations Subcommittee on Energy and Water proposed to cut investments in clean energy in half, and reduce investment in breakthrough clean energy technology research investments by 80 percent in its FY 2014 spending bill. And as Mr. Van Hollen noted, the budget sequester has hin-

dered oil production for public lands due to funding cuts at the Department of Interior that have slowed lease approval.

The House of Representatives has ignored oil use reductions, slashed investments for new clean energy technologies, and would eviscerate public health protection from pollution. This is an oil-above-all strategy that would benefit big oil companies at the expense of everyone else. Hopefully, the House of Representatives will join President Obama in supporting a true all-of-the-above energy strategy.

Thank you, and I look forward to your questions.

[The statement of Mr. Weiss may be accessed at the following Internet address:]

http://www.americanprogress.org/wp-content/uploads/2013/07/Weiss_Testimony.pdf

Chairman RYAN. Thank you. And it cannot be said that we do not encourage a wide range of views here. Mr. Durbin.

Mr. VAN HOLLEN. For the record, it is because you let us pick a witness.

STATEMENT OF MARTIN J. DURBIN, PRESIDENT AND CHIEF EXECUTIVE OFFICER, AMERICA'S NATURAL GAS ALLIANCE

Mr. DURBIN. Chairman Ryan, Ranking Member Van Hollen, and members of the Committee, thank you for the opportunity to appear before you today. I am Marty Durbin, president and CEO of America's Natural Gas Alliance. ANGA represents North America's largest independent natural gas exploration and production companies.

We work with industry, government, and customer stakeholders to ensure the continued availability and increased use of our natural gas resources for a cleaner and more secure energy future. I appreciate the opportunity to join this conversation on how domestic energy production is revolutionizing the path of jobs and economic growth for our country.

Just as natural gas is today a foundation fuel in terms of our energy use, so is the natural gas industry a foundational engine of U.S. job creation and economic growth. Mr. Larson's already laid out the economic contributions from employment to capital investment to government revenue. These contributions are made possible by technological innovations led by hydraulic fracturing and horizontal drilling that allow our nation to safely and responsibly access vast domestic reserves of shale gas that typically lie a mile or more below the earth's surface.

Our natural gas resources exist in such abundance that the U.S. has transitioned in just a handful of years from being a net importer of natural gas to now being the world's largest producer of this clean energy source. And there is now broad consensus that the U.S. has enough natural gas to meet our nation's growing energy needs for generations to come.

Unique among our nation's energy choices, natural gas is used in every sector of our economy, from electric power generation and industrial feedstocks to residential and commercial uses and transportation.

With market forces driving this dynamic, natural gas is delivering substantial contributions to core national priorities. Among the highlights, this industry contributes \$113 billion annually to federal, state, and local government budgets, funding critical government priorities. It supports 3 million American jobs. It is projected to help create nearly a million additional jobs in the U.S. manufacturing sector alone by 2025. It is primarily responsible for a reduction in U.S. power sector carbon emissions to levels not seen since 1994. And along with rising domestic oil production, natural gas is helping lead our nation to energy self-sufficiency and strengthen our energy security.

This impressive performance is made possible not only by the abundant supplies of natural gas, but also by policies that encourage safer, responsible development with appropriate state-led oversight of this clean, low-cost American energy source. To maximize these benefits to our nation, government should exercise caution in imposing unnecessary costs on an American industry that is providing so much economic value. Given the extraordinary contributions that American natural gas is making to our nation, we must ensure that federal policy allows this incredible record of success to continue.

Two areas of significant potential impact are tax policy and export policy. Natural gas development is a highly capital-intensive industry. Like all other capital-intensive industries, cost recovery is critical to its success. Cost recovery is not a handout, a loophole, or a subsidy. So, for example, erasing the intangible drilling cost deduction would have a significant negative impact in both the short term, primarily on U.S. manufacturing and industrial consumers who rely on affordable natural gas to remain competitive, and the long term, where it is projected that such a move would actually decrease government revenue significantly beyond a 10-year time horizon.

Export policy presents another opportunity to signal to the marketplace that the U.S. government is disciplined and consistent, both in its support of natural gas and the principles of free trade. The Department of Energy's approval of the Freeport, Texas LNG export terminal is a positive sign. Timely approval of the remaining export permit applications is needed to continue this progress, improve the U.S. trade balance, and make significant headway toward the bold national objective of doubling U.S. exports during this decade.

Natural gas is one of the bright spots in our economy. Free trade principles, technology advances, and fair tax policies will allow us to continue the success story.

So, thank you, again, for the opportunity to appear before you. Our industry is proud of the contributions we make for our nation, and we stand ready to work with this Committee, the Congress, and the Administration to ensure a path forward that allows natural gas to continue as a foundation of U.S. job creation and economic growth for decades to come. Thank you.

[The prepared statement of Mr. Durbin follows:]

PREPARED STATEMENT OF MARTIN J. DURBIN, PRESIDENT AND CEO,
AMERICA'S NATURAL GAS ALLIANCE

Chairman Ryan, Ranking Member Van Hollen and members of the committee, thank you for the opportunity to testify on behalf of America's Natural Gas Alliance (ANGA) and its member companies.

My name is Marty Durbin. I am President and CEO of America's Natural Gas Alliance, which represents North America's largest independent natural gas exploration and production companies. Our mission is to promote the growing demand for and use of our nation's vast domestic natural gas resources. In pursuing this mission, ANGA works with industry, government and customer stakeholders to ensure the continued availability and increased use of our natural gas resources for a cleaner and more secure energy future.

I appreciate the opportunity to join this timely discussion on how the nation's vast domestic energy resources are revolutionizing not only the energy game, but also the path to jobs and economic growth for our country as a whole.

SUMMARY

Just as natural gas is a foundation fuel in terms of our energy use, so is the natural gas industry a foundational engine of U.S. job creation and economic recovery. The industry contributes \$113 billion annually in government revenues, supports 3 million American jobs and contributes \$440 billion each year to the nation's economy.¹

This contribution is made possible by technological innovations, led by hydraulic fracturing with horizontal drilling, that are allowing our nation to safely and responsibly access vast domestic reserves of shale gas that lie typically a mile or more below the earth's surface. Our natural gas resources exist in such abundance that the United States has transitioned in just a handful of years from being a net importer² of natural gas to the world's largest producer of this clean energy source.³

There is now a broad consensus that the U.S. has enough natural gas to meet our nation's growing energy needs for generations to come. This abundance has made possible stable, affordable prices for natural gas consumers. Unlike any other fuel, natural gas is used in every part of our economy—electricity generation, residential and commercial uses, manufacturing feedstock and energy needs, as well as transportation fuel—allowing natural gas to deliver value throughout the fabric of our entire economy.

America's newfound abundance of natural gas has fundamentally transformed the outlook not only for our economy, but also for our nation's energy security. Market forces are helping deliver substantial contributions not only to the U.S. Treasury but also to core national priorities. Among the highlights, natural gas:

- Contributes \$113 billion annually to federal, state and local government budgets;
- Supports 3 million American jobs;
- Is projected to help create nearly 1 million U.S. manufacturing jobs by 2025;⁴
- Is primarily responsible for a reduction in U.S. power sector carbon emissions to levels not seen since 1994;⁵
- Along with rising domestic oil production, is delivering profound strides in the nation's energy self-sufficiency and security; and
- Is delivering \$926 in annual savings to the average U.S. household—savings in both electricity and home heating costs. And, this figure is expected to grow to more than \$2,000 per year by 2035.⁶

This impressive performance is made possible not only by the abundant supplies of natural gas, but also by policies that encourage safe and responsible development with appropriate state-led oversight of this clean, low-cost American energy source.

To maximize these benefits to our nation, government should exercise caution in imposing unnecessary costs on an American industry that is providing so much economic value. To do so would have a negative ripple effect through our economy and diminish the contributions our natural gas industry can make not only to government revenues but also to the U.S. economic recovery as a whole.

DOMESTIC ENERGY DEVELOPMENT A RARE BRIGHT SPOT IN U.S. ECONOMY

Shale energy, including both domestic natural gas and oil development, has been one of the brightest spots in our economy over the past five years.

The growth we've seen and the opportunity ahead come from the development of so-called "unconventional" natural gas resources, chief among them shale gas. Shale gas was 35% of natural gas production in 2011, and it's predicted to reach 52% by 2040.⁷

To offer a sense of the magnitude of this opportunity: In 2011, total capital expenditures for the natural gas industry as a whole reached \$109 billion.⁸ In 2025, that figure will rise to \$123 billion—for shale and other “unconventional” natural gas resources alone.

This is an economic stimulus that will provide significant additional revenues to government at all levels.

In addition, roughly half of all natural gas-related jobs today are powered by shale resources. More than 800,000 additional jobs will be created by 2025—again by shale and other unconventional natural gas resources alone.⁹ It should be further noted that the high quality of jobs created through shale gas is reflected in above-average pay—with direct jobs spread across 31 shale gas-producing states paying \$23-plus per hour.

U.S. EMPLOYMENT—UNCONVENTIONAL NATURAL GAS (2010–2025)¹⁰

	2010	2015	2020	2025
Direct	237,968	333,776	403,472	400,958
Indirect	327,000	479,488	593,817	598,497
Induced	443,693	650,185	797,485	812,499
Total	1,008,661	1,463,449	1,794,774	1,811,954

In addition to those employed directly in the natural gas industry, indirect employment tallies those who work in related industries in the natural gas supply chain. Induced jobs represent jobs created by the spending of the first two categories. These are conservative figures that do not take into account the many unrelated American industries that are flourishing in an environment of low-cost natural gas. These include the estimated one million manufacturing jobs that are forecast to be created through 2025 because abundant, affordable natural gas is making American workers and U.S. companies more competitive in the global marketplace.

NATURAL GAS CONTRIBUTES \$113 BILLION ANNUALLY IN GOVERNMENT REVENUES

In 2011, natural gas contributed nearly \$113 billion in government revenues. In addition to \$53 billion to the U.S. Treasury, this included \$58 billion in contributions to state and local budgets¹¹—helping fund schools, law enforcement, hospitals and other local priorities. For this reason, you see governors across the political spectrum, from red states and blue states alike, enacting laws and regulations that encourage responsible energy development in their states. Additionally, the government—like all natural gas consumers—has enjoyed substantial savings from reduced operating costs associated with low-cost natural gas.

Here is the 2011 breakdown of government revenues from the total natural gas industry:¹²

- Federal Taxes: \$53 billion
- State and Local Taxes: \$58 billion
- Federal Royalty Payments: \$2 billion
- Total: \$113 billion

Similar to the employment and capital expenditure projections, shale gas will drive future growth in government revenue contributions at all levels of government. In fact, federal, state and local government revenues from shale and other unconventional gas production will almost double from 2010 to 2025.¹³

GOVERNMENT REVENUES—UNCONVENTIONAL NATURAL GAS (2010–2025)¹⁴

[\$ Billions]

	2010	2015	2020	2025
Federal Taxes	16.5	24.2	29.7	30.3
Corporate Taxes (federal)	3.7	5.5	6.7	7.0
Personal Taxes (federal)	12.8	18.7	23.0	23.3
Federal Royalty Payments	0.9	1.2	1.2	1.5
State and Local Taxes	16.4	23.9	28.8	31.1
Corporate Taxes (state & local)	10.5	15.6	19.0	19.7
Personal Taxes (state & local)	2.2	3.2	3.9	4.0
Severance Taxes (state & local)	2.6	3.6	4.1	5.0
Ad Valorem Taxes (state & local)	1.1	1.6	1.8	2.3

GOVERNMENT REVENUES—UNCONVENTIONAL NATURAL GAS (2010–2025)¹⁴—Continued
[\$ Billions]

	2010	2015	2020	2025
Total Government Revenue	33.8	49.3	59.8	62.9

AMERICAN NATURAL GAS ABUNDANCE KEY TO U.S. ECONOMIC RECOVERY

In setting sound fiscal policy, it is imperative to consider not just industry jobs, investment and government revenue, but also the far more broad and positive impact that abundant, affordable natural gas is having throughout our economy. Unique among our nation's energy choices, natural gas is used in every sector of our economy, through its prominent roles in electricity generation, industrial and manufacturing fuel uses (generally referred to as "feedstock"), residential and commercial uses and as a transportation fuel.

Natural gas accounts for more than 25% of our total energy use in the United States. The fact that domestic dry gas production has increased 20% since 2008,¹⁵ and wellheadprices have been reduced by roughly half since 2008 has had a profound effect on the competitiveness of a wide variety of American industries.

ELECTRICITY GENERATION

- Natural gas accounts for 24% of our electricity generation as of 2012;¹⁶
- Electricity users on average have saved 8% since 2008 thanks to reliable, abundant and affordable supplies of natural gas;¹⁷ and
- Natural gas' cleaner profile across a broad array of emissions is allowing utilities throughout the country to more cost-effectively achieve environmental goals.

MANUFACTURING FEEDSTOCK

- Natural gas accounts for 26% of energy used in the industrial sector, including feedstocks;¹⁸ and
- More than \$110 billion of new or expanded manufacturing projects have been announced through 2018 with low natural gas prices cited as the reason for the additional capacity.¹⁹ This is a manufacturing renaissance including chemicals, plastics, fertilizer, steel, aluminum, tires and more.

RESIDENTIAL/COMMERCIAL USES

- Natural gas accounts for 64% of energy used in heating;²⁰
- Natural gas consumers have saved more than 30% in heating costs since 2008. This includes savings related to space and water heating, as well as appliances, such as stoves and gas dryers, and these savings free up cash flow to spend elsewhere.²¹

TRANSPORTATION

- Natural gas comprises 0.1% of energy used in transportation. However, its use in this sector is expected to grow significantly over the next decade;²²
- Natural gas is the lowest cost transportation fuel available on the market today. Between 2010 and 2012, the average price of compressed natural gas was \$1.20 less than the gasoline gallon equivalent;²³
- For this reason, leading U.S. companies from Waste Management to AT&T to UPS are converting their vehicles to run on affordable, American natural gas;
- Additionally, one in five city transit buses now run on natural gas, with one in three new transit bus purchases being CNG vehicles;²⁴
- Up to 30% of the nation's trucking fleet may run on natural gas by 2020;²⁵
- And, just yesterday, ANGA unveiled four demonstration dual-fuel passenger vehicles. They run on both gasoline and natural gas. Their purpose is to show the potential range of consumer choices—from luxury SUV to muscle car to commuter vehicles—that have the performance American consumers expect, while adding the fuel efficiency and significant cost savings that natural gas has to offer.

STRONG NATIONAL INTEREST IN CONSTRUCTIVE POLICIES

Given the extraordinary contributions that American natural gas is making to our nation, we must ensure that federal policy allows this incredible record of success to continue. Two areas of significant potential impact are tax policy and export policy.

Natural gas development is a highly capital-intensive industry, and like all other capital-intensive industries, cost recovery is critical to the industry's success; it is not a handout, a loophole or a subsidy. Erasing the Intangible Drilling Costs deduction would have a significant negative impact in both the short term—primarily on U.S. manufacturing and industrial consumers who rely on affordable natural gas to remain competitive—and the long-term, where it is projected that government revenue would decrease significantly beyond a 10-year time horizon.

Export policy is another opportunity for the government to signal to the marketplace that U.S. policy is disciplined both in support of natural gas and in support of the principle of free trade. The Department of Energy's approval of the Freeport, TX, LNG export terminal is a positive sign. Timely approval of the remaining export permit applications is needed to continue this progress, improve the U.S. trade balance and make significant headway toward the bold national objective of doubling U.S. exports during this decade. Without affordable and abundant natural gas, this topic would not even be part of our nation's dialogue. Free trade principles, technology advancement and fair tax policies will allow us to continue this success story.

CONCLUSION

Natural gas is one of the bright spots in our economy, and it's important that we pull in a consistent and constructive direction to continue this progress. ANGA's member companies are part of an industry that contributes \$113 billion per year to federal, state and local government. Equally important, our industry supports 3 million American jobs.²⁶ Natural gas also is making strides in the nation's energy security, and it is a primary reason that U.S. energy sector carbon emissions are at 20-year lows. We believe that allowing markets to continue to deliver this huge stimulus to communities across the nation is an essential component in our ongoing economic recovery—and will ensure an appropriate balance that both delivers ample revenues to government and ensures natural gas can continue to be a foundation of U.S. job creation and economic growth for decades to come.

ENDNOTES

¹"The Contributions of the Natural Gas Industry to the US National and State Economies" ANGA/IHS, 2012.

²AEO 2005 vs. AEO 2012.

³"Annual Energy Outlook", EIA, 2013.

⁴"Shale Gas: A Renaissance in US Manufacturing?". National Association of Manufacturers and PriceWaterhouseCoopers, 2011.

⁵EIA June 2012 Monthly Energy Review.

⁶"Economic and Employment Contributions of Shale Gas in the United States." IHS, 2011.

⁷EIA Annual Energy Outlook: 2013 Early Release.

⁸"The Contributions of the Natural Gas Industry to the US National and State Economies," ANGA/IHS 2011.

⁹"The Economic and Employment Contributions of Unconventional Gas Development in State Economies," ANGA/IHS, 2012.

¹⁰"The Economic and Employment Contributions of Unconventional Gas Development in State Economies," ANGA/IHS, 2012.

¹¹"The Contributions of the Natural Gas Industry to the US National and State Economies," ANGA/IHS, 2011.

¹²"The Contributions of the Natural Gas Industry to the US National and State Economies," ANGA/IHS, 2011. Note: This study covers the natural gas industry as a whole (onshore and offshore, conventional and unconventional resources).

¹³"The Economic and Employment Contributions of Unconventional Gas Development in State Economies," ANGA/IHS, 2012.

¹⁴"The Economic and Employment Contributions of Unconventional Gas Development in State Economies," ANGA/IHS, 2012. Note: This is a tally of government revenues associated solely with unconventional natural gas development. As such, these figures represent a subset of overall natural gas industry government revenue contributions, which totaled approximately \$113 billion in 2011.

¹⁵"Annual Energy Outlook," EIA, 2013 & "Annual Energy Review," 2012.

¹⁶"Annual Energy Outlook," EIA, 2013.

¹⁷"Annual Energy Outlook," EIA, 2013 & "Annual Energy Review," 2012.

¹⁸"Annual Energy Outlook," EIA, 2013.

¹⁹Company announcements, 2011 through May, 2013.

²⁰EIA, "Annual Energy Outlook," 2013 & "Annual Energy Review," 2012.

²¹EIA, "Annual Energy Outlook," 2013 & "Annual Energy Review," 2012.

²²EIA "Annual Energy Outlook," 2013.

²³Compiled data from "Clean Cities Alternatives Fuels Price Reports", June 2010 to July 2012.

²⁴"Transit on the Cutting Edge of Clean Technology," American Public Transportation Association, September, 2012.

²⁵"Energy 2020: Independence Day," Citigroup, 2013.

²⁶“The Contributions of the Natural Gas Industry to the US National and State Economies,” ANGA/IHS, 2011.

Chairman RYAN. Thank you. Since you just finished last, Mr. Durbin, I want to ask you a couple questions about natural gas and about permitting. In 2012, the average application to permit to drill on federal lands was processed in 228 days; 4,256 total permits were looked at, approved, in that year. By comparison, in 2007, we had 196-day average turnaround for permits, and 7,124 total permits. So that means the BLM, the Bureau of Land Management, is taking 16 percent longer to do 60 percent of the work.

By contrast, states have a different track record. Their processing times are far, far faster: North Dakota, 10 days; Ohio, an average of 14 days; Colorado, an average of 27 days. So we have got 10- to 27-day turnaround on permits in these states, and 228-day average turnaround in the federal government. What is the difference? What is the justification or the reason, in your estimation, for the huge difference in turning these permits around? And more importantly, what is the range of estimates on what we now think we have on federal lands versus, say, where we were in just 2007?

Mr. DURBIN. Well, thanks for question, Mr. Chairman. And I think there is no question that the, you know, permitting timelines are one of the significant factors in providing certainty for the industry. And I think that one of the distinctions you can make here is that in the states where we are operating, in many cases, you have got a regulatory structure in place that has traditionally regulated oil and gas, you know, production. So, frankly, I mean, that is a good story. Then, you know, out at the state level, they have got the appropriate expertise, and they know their, you know, they know their state geology and hydrology and all the rest, and are able to, you know, to be, frankly, just to be more efficient in approving of the permits.

You know, we are not seeing that at the federal level, and certainly that is an area where we would like to continue to working with the Administration, with BLM, to find how can we find ways of making that process more efficient. We are clearly seeing more of the production move to where the permitting is easier.

Chairman RYAN. And so that is basically the question, then. So there are only so many rigs that are going to be available, only so much drilling that will occur. And so if it is a 10-day turnaround in some state, and a 228-day turnaround in the federal government, is the federal government not basically missing out on those kinds of revenues that we would get through royalties and leases, because the path of less resistance, the easier way to go, the natural place to deploy your capital and your rigs is on private lands, say, North Dakota, versus BLM land because it is fewer and it is longer. And so then we are basically forgoing a lot of revenue that could come to the government. Our last transportation bill said, “Put those resources, those federal revenues that come from oil leases and royalties, into the Highway Trust Fund to help us with infrastructure.”

So are we basically making a choice here, maybe not intentionally, through the regulatory process to forgo that revenue for the federal government and push this drilling into the private area?

Mr. DURBIN. I think there is no question that a speedier, more certain process at the federal level would result in greater production on those lands.

Chairman RYAN. Mr. Larson, your firm is very well-known for its econometric models. It is widely cited, used quite a bit. I was really moved by these numbers. I come from Wisconsin. We do not have shale, so where I come from, people do not realize that there may be a benefit, other than lower gas and oil prices, people do not realize that there is an actual direct benefit. You said there were 20,000 jobs in my state connected to this? Thirty percent of the jobs created in your model are from areas in the economy that are not directly related or not from states that have this. Can you elaborate on that?

Mr. LARSON. Yeah, basically what we do is we look at the very supply chains that support the upstream exploration and production activity, and so obviously, as you are going out and doing these exploration and production activities, you need to acquire a pipe-fitting machinery, power generators, sand, aggregate gravel cement casing, and so there is this vast supply chain across this country. The beautiful thing is, as Mr. Durbin alluded to, is this is a home-grown technology, and so what it means, when you look at sort of how the dollars flow through our economy, those dollars are being spent domestically on the providers of this technology here.

And so when we looked at our models, we found that the supply chains reached far into all these other states. And so even though you do not have a geographic play in your boundary, you do get to tap into that supply chain, and, as I indicated, 20,000 jobs in your state, and about \$330 million in tax revenues, by virtue of some of the leading areas, like sand, and aggregate, and machinery within your state in particular.

Chairman RYAN. So your model says 1.7 million jobs tied to this industry in 2012 going up to 3 million by the end of this decade?

Mr. LARSON. That is correct, yes.

Chairman RYAN. So I want to get a sense of the revenue. So this is where we kind of come in here in the Budget Committee, which is, we have sort of old methodologies and old revenue numbers with respect to what we could actually bring into the federal government to help us with our deficit and debt reduction. You mentioned \$2.5 trillion in revenue between 2012 and 2035. Can you break that down? I know that is all levels of government. Do you have a breakdown between state and local and federal?

Mr. LARSON. Yes, so what you are going to see is just roughly a split of about 50/50, so you are going to see that split roughly in half. One of the primary drivers of the source of revenue is corporate, and then personal income tax, and so that is where most of the revenue happens to be coming from, but you can basically split that number into about 50/50 between the federal, and then the state and local. I do not have the disaggregation between the states, though, and the local.

Chairman RYAN. Okay, right, so about 1.25 trillion to the feds through expanded use.

Mr. LARSON. That is correct, roughly. That is correct.

Chairman RYAN. Give me a sense of how this helps the average family. Give me a sense of, you mentioned \$1,000, walk us through

how this works for the average family, and what I am most concerned about is how does this affect low-income individuals who live on total disposable income, who do not have savings, who are living on complete disposable income? How does this help them? How is this, this breakthrough boon, not just for the industries involved, or not just for governments, but how does it help the average consumer, particularly low-income people?

Mr. LARSON. Sure, a couple of examples. First, when you think about energy, it is in inelastic demand. It is something we have to have. So when you look at your disposable income, you do not pick and choose how much you allocate to energy. You really have to have energy; it is just a necessity, and so there is a fairly high demand for it there. When you look at that \$1,000, those savings are recognized to families of all incomes by virtue of the fact that we have lower energy prices flowing through this. So it could be direct consumption, so individuals who heat their homes through natural gas, or cook through natural gas, or things of that nature; less direct through power gen, which we have seen prices come down as a result of this unconventional revolution, or the supply chain of the material that is produced through these activities.

So you think about the petrochemical industry, which now has a lot cheaper feedstock and derivative that goes into all these goods and services we consume; those savings are passed on to consumers as well. So you see this downward pressure on the price of goods in the broader economy by virtue of this. So there is one example.

The other example I point to is, the supply chain I talked about, the reason that we see these jobs spread across the country, expands into jobs that many people do not think of touching immediately the energy industry. And so you pick a state like North Dakota, an example that you used, Chairman Ryan. Individuals in North Dakota are enjoying what we call the induced effects of the earnings of those who are directly employed in this exploration and production, or in the supply chain, their income, they go out and they spend to live in that economy, and they are employing people who are waiters, waitresses, small businesses, and so there is a broad reach to all individuals in American society from this.

Chairman RYAN. Yeah, so one of the things that we are particularly sensitive, where I come from, in my state, we have more jobs per capita tied to manufacturing than any other state in the country. I think Indiana, I think we have some Hoosiers here, I think Indiana has more manufacturing total, but in the Midwest, we basically make things. And one of the problems we have seen over, say, since the mid-'90s on, is a lot of manufacturing going overseas, for labor and other reasons, tax policy. But we are witnessing a sort of resurgence of our manufacturing industry. We are seeing some of our manufacturing coming back, and among the reasons they seem to cite is more stable natural gas, more stable input prices. So that, to me, says that there is not only a win-win, but a win-win-win, in the fact that this can help us bring back the resurgence of our manufacturing sector.

I just want to ask you one quick question about natural gas and jobs, Mr. Durbin. You said that through shale gas production the pay for these jobs averages around \$23 an hour. That is, you know, about three times the minimum wage. Is that typical for these

kinds of jobs, and what kinds of jobs are you talking about when you mention this?

Mr. DURBIN. It is an average, but it is typical. I mean, you can look at anything, you were mentioning in North Dakota, and that may be an outlier, but even there you can, with a high school diploma and you have a CDL license, you can be making \$90,000 a year in North Dakota. But that is, again, even acknowledging that may be an outlier, throughout the industry the average numbers, the oil and natural gas industry, especially in the upstream side, does pay above average wages. And they are jobs that are not only good jobs coming into the company, opportunities to move up, but jobs available for almost every educational level.

So, again, it is an opportunity that, from an employment standpoint, that is very broad, now across the country. The oil patch is now all over the country. So we have got the opportunity here to grow employment in this sector, very good-paying jobs, opportunities for advancement, almost any education level.

Chairman RYAN. Thank you. Mr. Van Hollen.

Mr. VAN HOLLEN. Thank you, Mr. Chairman. And as the Chairman pointed out, the development of natural gas in the country has improved our competitive position. You do see more manufacturers moving back to the United States to take advantage of that, and that is all good news.

I would point out that as of right now, 83 percent of the government lands, federal lands that are being leased, are not being produced. In other words, they are not being productive. People are not drilling for oil and gas on those lands. The Republican bill that is coming to the floor of the House this week would essentially open up all of our outer continental shelf to drilling for oil and gas, without having learned any of the lessons from the big oil spill in the Gulf, and, as I pointed out, that is at a time when we have already got lots of federal lands that have been leased that are not being produced at all.

Now, and I would also say that despite the fact that that Republican bill would essentially open up all the outer continental shelf, according to the Congressional Budget Office, and I would like to submit this for the record, Mr. Chairman, the 10-year savings from that, 10 years is \$1.5 billion in terms of the federal government. Well, obviously, every cent counts, but that is not a dramatic increase. In contrast, we have proposed that we eliminate the subsidies for the big four integrated oil and gas companies as part of our sequester replacement bill, and use some of those funds to reduce the deficit but also to invest in some of these cleaner technologies of the future that have been demonstrated to also generate and create jobs.

And I would just point out, Mr. Chairman, that President Bush said, when he was in office, and I am quoting, "I will tell you with \$55 oil, \$55 a barrel of oil, we do not need incentives to the oil and gas companies to explore. There are plenty of incentives." That was at \$55 per barrel; we are now at \$105 per barrel. And in the Committee that is supposed to make tough choices on behalf of the American public, I would think that we would decide to get rid of those taxpayer subsidies and put them to a higher purpose, and yet, at this very moment, I believe, over in the Appropriations

Committee, as a result of the budget that passed this Republican House, they are dramatically cutting our investment in cutting-edge research in clean technologies, an 81 percent cut, as Mr. Weiss pointed out, in the account that funds cutting-edge technologies in clean energy. An over 50 percent cut in the energy and efficiency investments, and that is compared to last year.

So that just seems to me counterproductive at a time when our major economic competitors are moving forward in this important space. And Mr. Weiss, I would ask you if you could, just to talk about what Germany is doing, what China is doing, and the risk to the United States of falling behind in this important area of energy production.

Mr. WEISS. Thank you, Mr. Van Hollen. Many of our economic competitors are investing heavily in their domestic clean energy industries. In 2011, for the first time since President Bush left office, the United States actually invested more in clean energy than China, but China was back ahead of us again in 2012. In Germany, they are one of the leading countries for the production of solar energy and solar equipment, even though Germany has less sunshine than any state in the union except for Alaska. In fact, Germany, last year, had 20 percent of its electricity generated by renewable energy; of course, so did Iowa. And so it is happening, but we need to keep investing in those technologies to create jobs.

Mr. VAN HOLLEN. One of the things we have done in this country as a matter of public policy is to try to encourage the development of fledgling industries, and then when they become more mature industries, they are more on their own in the free market, as it should be. Could you talk about the mismatch in terms of our public investment through various incentives? Between oil and gas, which I think everybody would agree is a mature industry; I do not think anybody can suggest that the big four integrated oil companies are going to do less if they do not have the benefit of these big taxpayer subsidies. In fact, their executives, just a few years back, testified to such. But the cost of not investing in these other areas, and the negative impact, we will see if we cut, for example, the ARPA-E budget, which is the advanced research budget at the Department of Energy, by 81 percent, as the Republican budget would have us do.

Mr. WEISS. Yes, in fact, 35 years ago there was concerns about a natural gas shortage in the United States, so the Department of Energy, working with private gas companies, worked together to develop the horizontal drilling and advanced fracking technology that we are now using for the shale gas revolution; that was due to public-private partnership led by federal investment. The Nuclear Energy Institute recently did a study and found that over the last 60 years, we have invested \$7 in the oil and gas industry for every \$1 that we have invested, through subsidies and other supports, tax breaks and the like, \$7 for oil and gas, \$1 for renewable energy.

And it seems to me as you noted, that since oil and gas is a very mature industry where the five largest integrated companies have \$70 billion in cash reserves where they spend one-third of their profits buying back their own stock, they do not need the \$2.5 billion a year they get from the taxpayers in order to continue to be-

come successful companies. In addition, it is important to note that those same companies are producing less oil now than they did six years ago even though they are making more money, and that is because through nothing of their own doing, oil prices have risen and gasoline prices have risen, so they can make more money producing less oil. They do not need these \$2.5 billion a year from us.

Mr. VAN HOLLEN. Thank you, Mr. Weiss. Mr. Durbin, I mean, your organization, and, again, I think that natural gas development has been good for American competitiveness; you are not opposed are you to investing in clean energy technologies, I mean, in that kind of research, are you?

Mr. DURBIN. No, certainly not. We are not opposed to investing in clean energy technology. In fact, one of the facts of the matter is, if not for natural gas, you will not have solar and wind power out there. Because when the sun is not shining and the wind is not blowing, you know, we are providing that backup power. So you do not have one without the other.

But you have also got to look at the scale, and if we want to power this economy going forward, we are simply not going to be able to do it with solar and wind. And even as the president pointed out yesterday, you know, since 1994, we have seen natural gas production increase greatly, which, principally, through market force has now driven economic growth, created jobs, lowered emissions to the same level we had in 1994, while lowering family energy bills and putting us in a position to play a global role in energy policy, which helps us on a trade standpoint.

Mr. VAN HOLLEN. I agree with what you just said, and, as you said, the president indicated yesterday he thought there was a very important role for natural gas as part of an all-of-the-above energy strategy. The reason I ask you the question is because you look at the budget that is moving through this House, you see dramatic cuts in the kind of investment in clean energy technology. And I would just ask you if you are familiar with the Department of Energy's SunShot initiative, which, as I understand it, is designed to make sure a natural gas-fired power plant can burn 20 percent less fuel using concentrated sunshine. It seems to be a great example of the mix of solar and natural gas. Are you familiar with that project?

Mr. DURBIN. I am not familiar with it.

Mr. VAN HOLLEN. Mr. Weiss, if you could just respond?

Mr. WEISS. Yes, one thing that is important to note is, the program that is developing advanced storage for electricity technology is the ARPA-E program that you mentioned just a minute ago that is going to face an 80 percent budget cut under the Appropriations bill, and that program, by the way, was signed into law by President George W. Bush back in 2007.

Mr. VAN HOLLEN. Thank you, Mr. Weiss. Thank you, Mr. Chairman. I thank all the witnesses.

Chairman RYAN. Mr. McClintock.

Mr. MCCLINTOCK. Thank you, Mr. Chairman. Mr. Larson, we just heard the Administration's energy policy described as "all of the above." Would you describe that as "all of the above"?

Mr. LARSON. Well, I think there is a role for all the energy sources to play.

Mr. McCLINTOCK. No, no, that is not what I asked. Is this Administration approaching the most plentiful resources that we have available, oil, gas, and coal, as an all-of-the-above strategy?

Mr. LARSON. I would just say that all these resources that we currently have, the endowment we have, would have to be considered as opportunities.

Mr. McCLINTOCK. Mr. Durbin, would you describe these as an all-of-the-above strategy?

Mr. DURBIN. Well, my concern, clearly, there are laid-out roles for many different types of energy. Again, my concern is that we have got all of these benefits coming from domestic production, but then we see policies that may undermine our ability to continue that progress, both through tax proposals and other.

Mr. McCLINTOCK. It is not only not promoting an all-of-the-above strategy, it is actually obstructing an all-of-the-above strategy. Is that fair to say?

Mr. DURBIN. I do not know if I would go that far, but I think there certainly are concerns of being able to develop our policies going forward.

Mr. McCLINTOCK. We are told that we need to "invest," in quotes, heavily in wind and solar because these are new fledgling industries, but was solar photovoltaic cells not first invented by French physicist Edmund Becquerel in 1839, Mr. Larson?

Mr. LARSON. Yes, solar has been around for a while, that is correct.

Mr. McCLINTOCK. And in nearly 175 years of scientific advancement, research development, and god knows how much in public subsidies, have we yet invented a more expensive way of producing electricity?

Mr. LARSON. As an economist I cannot comment on that. I just do not know the answer to that.

Mr. McCLINTOCK. Well, let me ask you this. Well, Mr. Durbin you alluded to this, not only is solar much more expensive than conventional sources, and wind much more expensive, and so we pay a great deal more for them just to begin with; on top of that, they are intermittent sources. Now we operate on an integrated grid, meaning that the amount of electricity put on the grid has to constantly match the amount of energy being drawn, or the grid simply collapses. Is that correct?

Mr. DURBIN. Correct.

Mr. McCLINTOCK. And because solar photovoltaic does not work very well in cloudy conditions, for example, if a cloud passes over a solar array, its energy production immediately drops to zero. Does that not mean that we have to back up every watt of this intermittent electricity with a watt of reliable electricity by spinning turbines 24/7, ready to produce electricity at a moment's notice, so we are paying twice for that electricity at once, inflated prices for solar and wind to begin with?

Mr. DURBIN. That is correct.

Mr. McCLINTOCK. And secondly, on top of that, we have got to keep conventional turbine generators moving constantly, ready to back up that unreliable power at a moment's notice. So we are paying twice for that power, is that correct?

Mr. DURBIN. Correct.

Mr. MCCLINTOCK. But then on top of that, we also have transmission problems; because of the nature of solar and wind electricity, we cannot transport them long distances over conventional lines. Do we not have to then construct high-voltage direct current lines to move this electricity over any kind of significant distance?

Mr. DURBIN. Yes.

Mr. MCCLINTOCK. So we are paying, then, for a third time a brand new transmission system for the sole purpose of carrying this extremely expensive and unreliable power from where it is produced to where it is consumed. Is that correct?

Mr. DURBIN. That is correct.

Mr. MCCLINTOCK. Does it make much sense to you for the federal government to be obstructing the vast amounts of conventional energy that we have right within our own borders, while, at the same time, lavishing public funds on unreliable and extremely expensive forms of electricity generation that have been around for, in the case of solar, for 175 years, and have not yet proven themselves after all that time?

Mr. DURBIN. Clearly demonstrates the need to find a balance here, where these other energy sources may make sense, in niche applications, or, you know, in particular regions around the country. But again, just to be able to provide the energy needed by such an enormous economy, and that we now have the opportunity with natural gas, domestic natural gas, to provide that cleanly.

Mr. MCCLINTOCK. Consumers are watching their electricity prices skyrocket specifically because of these policies, and it is about time that they were fully informed what is causing that pain every time their utility bill arrives in the mailbox, and it is precisely these policies supported and promoted by this Administration and its adherence in this Congress. I yield back.

Chairman RYAN. Thank you. Ms. Schwartz.

Ms. SCHWARTZ. Thank you very much, and I appreciate this hearing. As you can imagine, being from Pennsylvania, I am keenly interested in natural gas and the role it will play and can play in moving our economy, and offering us a cheaper energy source, and also in, well, in growing jobs. I certainly have been to visit one of the drilling sites in Pennsylvania, up in northeastern Pennsylvania, and got to see, actually, people working on the drilling rigs, and climbed up myself, got on one of those asbestos jumpsuits that you have to wear to do that. I will say there were jobs created and impressive skilled workers. None of them happen to be Pennsylvanians; that is a concern to us. They were all from, actually, this happened to be a Canadian company, on that drilling rig. So that is an issue for these homegrown jobs for us.

But I certainly, in contrast to the previous speaker, I do believe very strongly, as do I think many Pennsylvanians and many Americans, that it is important to reduce carbon emissions and to have a diversity of energy sources. I think that it is extremely important to us; we might not actually be doing the drilling as it was pointed out, of natural gas, without an interest in new sources of energy and an ability to go get it. So that gas was there for a long time, we just did not have a financially-feasible technology to go and drill it.

I think that Mr. Durbin might want to speak to that, but the fact is that we are moving in a very important direction in terms of energy efficiency and renewable standards that are growing a marketplace for cleaner technologies; that wind, and solar, and hydro, and biofuels all have great potential to be a part of our portfolio of energy sources. I think all of you, at least two of you would agree to that. There is no question.

But it is not mutually exclusive. Natural gas is important, it is a cleaner fossil fuel, and that is important to us, and it does have the opportunity, should we have distribution lines, being able to get to businesses, and homes, and transit, I mean, being able to convert some of our homes and businesses, and I suppose having distribution lines matters quite a bit. Not all of that is done yet, by any means, and I imagine you would be interested in that. And I will say that the technology and the growth in the way we do the drilling, and also distribution and use of natural gas is something I hope we continue to invest in and grow as well.

But as I say all that, as we do need this mix of a cleaner fossil fuel and these renewables, there is a major concern on the part of Pennsylvanians and most Americans, that we should do this right, that the development has to be done right; that we need to be able to assure Pennsylvanians, we are in the thick of this, that our health will not be impacted, that their health will not be impacted, that our water will not be contaminated, and that we will be able to say that. It is one of the reasons that I have signed on to the FRAC Act, which requires disclosure of chemicals and transparency about what is in the water and what comes out of the water that is used to get this natural gas. There are issues raised about air quality, due to methane emissions, and, of course, the issue of deforestation.

So my question really is, as we move forward to capture this very important natural gas, and to use it to drive the economy, and lower prices, and grow jobs in Pennsylvania and across the country, how do we assure, how can we be assured, and I think this is a question for Mr. Durbin, that all producers of natural gas are acting responsibly, that the regulations reflect our best science, that enforcement and monitoring natural gas extraction, and distribution, and use are truly safe. And I think we are at a point where we cannot yet say that, and I really wanted to offer you the opportunity to share, I hope, in this mission to do this responsibly, and do this drilling responsibly, and use natural gas responsibly.

Mr. DURBIN. Sure, if I could respond. The good news is, the industry agrees completely, we have to do this right. And the fact is, they are. No activity is zero risk, but I think Pennsylvania is a perfect example of where things are going right. Former Governor Rendell, I think, did a spectacular job of setting up a regulatory structure so that the production that takes place in that state is done and is regulated well at the local level. You have got experts on the ground. They made changes to the existing regulatory structure to help address specific concerns that came up through development in the state of Pennsylvania. The Pennsylvania regulators continue to look closely, all along the way, with regard to whether it was water contamination, they have changed regulations there, and the industry has complied.

Ms. SCHWARTZ. So we are moving forward being able to say we are going to learn from experience, we are going to be able to change those regulations, and, of course, monitor them as well. And you agree with all of that?

Mr. DURBIN. Exactly. That is exactly how it has been done and how it will be done going forward. Now your point before about employment as well, again, Pennsylvania is also an incredible example of the number of jobs that have been created there. And I would say, I will not dispute that you were on a site where you may not have seen some Pennsylvanians. But having worked very closely with the building trades in Pennsylvania, Frank Sirianni is the head of the Building Trades Council in Pennsylvania, I think he will tell you, in fact, his words to me were, they hope that if New York eventually gets rid of the moratorium, that his brothers and sisters in New York start complaining about how many Pennsylvanians are coming to New York.

Ms. SCHWARTZ. I look forward to working with you in the future.

Chairman RYAN. Thank you. Ms. Black.

Mrs. BLACK. Thank you, Mr. Chairman, and I appreciate you, Mr. Chairman, having this discussion that is so important as we look at jobs and the kind of jobs that can be created and the spur of the economy by the energy industry.

I want to go back Mr. Durbin to what the Chairman began his questioning, and that relates to the process of getting the approvals, and the amount of time that it takes for a state versus the amount of time it takes for the federal government. As the Chairman says, an average of 30 days, process permitting, in a state, and with the federal government, it is about 228 days. We know that states are doing permitting processes on their own lands, on their state lands, and, obviously, they have federal land there. States have done a very good job in this permitting; they have been good stewards of the environment, and they have shown that they are efficient and timely in doing so.

My question for you is, would it not make sense to, since the states, given their track record, very good track record on the environmental issues and their efficiency, would it not make sense to give them the ability to be able to do the permitting of the federal land that is within their state?

Mr. DURBIN. Well, again, as we talked about before, this clearly cries out for greater attention to figure out why there is such a huge discrepancy between the timing from the state level and the federal level. And I do think that there is got to be, at the very least, much closer coordination between the federal regulators and the state regulators. There is just no reason for such an enormous discrepancy in the timelines for getting a permit approval. So just as we see, because there are other environmental statutes that are implemented at the state level, again, there are lessons to be learned here, and I think this is an area of great opportunity to have that conversation going on between the states, the federal agencies, and the industry.

Mrs. BLACK. Well, I hear you say that there are lessons to be learned, and that we need to continue to look at it, but do you see any downside on allowing states being given the authority through

the federal government to make sure that everything the state is doing is in coordination with the state? Do you see any problems?

Mr. DURBIN. No, I do not see a downside because, again, we work very closely with the states, and do feel that they do a very good job.

Mr. WEISS. Ms. Black, may I address that?

Mrs. BLACK. Yes, you may.

Mr. WEISS. Thank you. First, I would like to interject, I know that the Chairman is very data-driven, and I try to be as well. I would like to interject some data from the Congressional Research Service on the very question of delays which CRS found, the delays have been cut almost in half between 2006 and 2011 for permitting. Secondly, CRS concluded that you cannot compare permitting on state and private lands with federal lands because the laws are different. Federal lands are designed for multiple use, which not only includes resource development, but also hunting, fishing, hiking, recreation, et cetera. And so therefore, the federal government has to look at more criteria than the states do because they only look at, many states, at one thing, which is research development. Thank you.

Mrs. BLACK. Well, I thank you, Mr. Weiss. I am not an expert in this area by any means, but my reading on this topic does show that, given the fact that the states have done such a good job in the environmental, and, certainly, your point is well taken that there are lands and specific things on those lands, but if there were a council or some way that there could be an approval by the state under their processing with the federal government, it seems to me that we would move things along a lot faster, and therefore have more jobs, which, obviously, in the economy, this is very important to us. I yield back.

Chairman RYAN. Thank you. Mr. Pascrell.

Mr. PASCRELL. Thank you, Mr. Chairman. Mr. Chairman, your party is bringing two bills to the floor this week, which would once again seek to recklessly expand offshore drilling: H.R. 1613, the Outer Continental Shelf Transboundary Hydrocarbon Agreements Authorization Act; H.R. 2231, the Offshore Energy and Jobs Act. Contrary to what many of my colleagues would have us believe, the president has pursued an all-of-the-above energy plan, which has included a vast expansion of oil and gas production. I share his belief that we need to make use of all the resources available to us while we transition to renewable sources of clean energy. We must make sure that all of our energy production is conducted in a very specific manner, which does not pose undue threats to our environment and our health from oil spills to climate change.

In my home state of New Jersey, we have a vibrant tourism industry centered at our shore, as well as a thriving commercial and recreation fisheries. Currently, we are still working to recover from Hurricane Sandy, which brought tremendous devastation. The people of New Jersey know that we cannot bring deep-water drilling for oil and gas to our shores. The risk of a catastrophic oil spill shutting down portions of our beaches is just too great. Thousands and thousands of New Jerseyans rely on healthy shore and environment for their livelihoods, far outweighing the benefits of off-

shore drilling, which produces more profits for Wall Street than community jobs.

Mr. Weiss, the Offshore Energy and Jobs Act, H.R. 2231, includes language which would force the Secretary of the Interior to conduct Lease Sale 220. This parcel of sea off the coast of Virginia is less than 100 miles from the Jersey Shore. Unilaterally opening up the Atlantic Ocean for drilling creates unacceptable risks for communities up and down our coast, and yet we are talking about trying to get the most out of this, the most benefit for everybody, and the Administration's policy, and I have certainly not been an advocate on many of the Administration's proposals for energy or the environment, but they have committed to ensuring that American taxpayers receive a fair return from the sale of public resources.

As drafted, the revenue-sharing provisions in H.R. 2231 would ultimately reduce the net return to taxpayers in the first place from development of the federal resources leased under this bill, 2231. Consistent with the president's budget, the Administration looks forward to working with the Congress, they have said this, they have written this, to improve the return to taxpayers from federal energy development through royalty reforms—you heard the Ranking Member speak of that before—incentives to diligent development, which we are doing to some degree. Talk about obstructionism. Talk about restrictions. We narrowed the incentives to diligent development of oil and gas rather than expanding them, and the improvements to revenue collection processes, which are not found, by the way, in 2231.

Now, Mr. Weiss, with nearly 83 percent of the technically recoverable offshore oil reserves in the United States already available for leasing, correct me if I am wrong on the number, 83 percent, adequate opportunities for energy development already exist. It is a hoax. You are listening to a hoax. That is what we are dealing with.

Eighty-three percent of that specific area is available. Does it make sense to push open new areas of our oceans to oil and gas exploration when we can invest in finding alternatives for the future? How do you respond to that?

Mr. WEISS. Thank you, Mr. Pascrell. Not only is the vast majority of the offshore oil already open for leasing, but, in fact, according to the Department of Interior, 70 percent of the offshore acres that are already under lease are inactive. In other words, oil companies are sitting on the leases.

Mr. PASCRELL. And why are they doing that?

Mr. WEISS. The reason for that is once they have a lease, the value of the oil that is in that lease can accrue to their valuation of their company, which helps increase their stock price even if they do not develop it.

Mr. PASCRELL. Does that have anything to do with the cost of the product and the final analysis?

Mr. WEISS. I am not sure how they calculate it, but certainly, as oil prices go up, the value of that oil goes up, and so, in fact, we have got lots of resources that are already open, lots of resources under lease that are not being developed, and that is where we ought to focus, rather than on these other areas that have not yet

been developed that have economic value to keeping them for fisheries, and tourism, and whatnot. Thank you.

Chairman RYAN. Thank you. Mr. Flores.

Mr. FLORES. Thank you, Mr. Chairman. I think it is fitting that this hearing is being held today, which is the fourth anniversary that the House of Representatives passed Cap and Trade. That was the single act in 2010 that caused me to think about running for Congress because I did not want to see our country, particularly our government here in Washington, send 10 million to 20 million jobs to other countries.

So I am an accountant by training so I would like to look at the sources and uses of funds when you talk about taking taxes from one group, and then turning around and making investments in another group. So let's go through the details here real quick.

Mr. Larson, you are an economist, correct? Okay. So let's assume that we raise taxes on American energy. What is the impact on American paychecks? Are they going to be higher or lower?

Mr. LARSON. Yeah, in general, you will see costs of taxes passed onto the consumers because of the inelastic demand.

Mr. FLORES. And what is the impact on American jobs?

Mr. LARSON. It is going to depend on how it impacts what we will call the economically recoverable reserve base, and the economics of that activity, and so if that tax increases the cost or breakeven point on those economic resources, it would reduce resource discovery and production.

Mr. FLORES. And that would reduce our GDP. Presumably, then deficits would go up. Family energy costs would go up. What is the impact of higher energy taxes on American manufacturing jobs?

Mr. LARSON. Well, it is a global economy, and as I mentioned in my statement, you know, there is a delicate balance of a lot of different factors that contribute to manufacturing in this country. You look at global wage rates, you look at transportation costs, you look at our energy cost domestically; all of those factors are in a balance of making decisions to invest or not.

Mr. FLORES. Right. Let me give you another personal example. In Jewett, Texas, Nucor Steel has a great operation where they recycle steel and make it into a usable product again. Because of the boom in natural gas drilling and the supply of natural gas, their cost per ton is down a dollar. That makes them more competitive on the international stage. Also means more great manufacturing jobs, not only in my district, but in Texas, but in this country.

So let's talk about the uses of all this tax money that the other side talks about in their all-of-the-above energy solutions. They want to make investments. Let's go through the status of some of the investments. How many jobs were created by the \$1.9 billion that was lost in Solyndra, Beacon Power, Evergreen Solar, Spectra, Rod-Fisk [spelled phonetically], Geronimo, WaterBound, Abound Solar, ECotality, MXenergy, and Schneider Electric? How many jobs do we still have from that investment?

Mr. LARSON. Our company did not investigate, do a study on that, so I do not know.

Mr. WEISS. Mr. Flores, I happen to know the number.

Mr. FLORES. I will get to that in a minute.

Mr. WEISS. Okay. Thank you.

Mr. FLORES. Let me give you the job metrics that came from the DOE study. It said that the Department of Energy has spent \$11 million per green job created since 2009. They spent \$26 billion of taxpayer money, and created 2,298 jobs. Mr. Larson, how long can we survive as an economy spending \$11 million to create a job?

Mr. LARSON. Obviously, you want to be efficient in your creation of jobs. That is important.

Mr. FLORES. Okay. That is good. So that gets us kind of to what the overall arching theme is: Who is better at making investments in different things? I mean, you heard the other side virtually saying the federal government should take full credit for fracking. I agree that there was some basic research dollars invested in fracking, but who took it to the next stage? It was private industry that took it. It was private industry that took it.

So, you know, the U.S. government can invest in basic research, it can invest in applied research, it can invest in venture capital, and also in private equity types of investments. But where is it that the federal government does the best, Mr. Larson?

Mr. LARSON. In terms of?

Mr. FLORES. Spending the dollars. It is in basic research.

Mr. LARSON. Yeah, that is correct.

Mr. FLORES. I mean, we have already seen what it has tried to do in applied research. We have tried to see what it did in venture capital with Solyndra and its brothers and sisters. The reason this is important to me is that I am the largest producer of residential solar power in Brazos County, Texas. I did it because I could afford it. I did it because I am a little bit kind of a geek on that type of stuff. And I can tell you that because what it costs, net of any benefits that were received, it will never, ever pay out for me.

So the question is, why would Congress decide that it can be so smart that it wants to impose those costs on every ratepayer in the country? Why would it want to impose those costs on the taxpayers of this country? And the question is, it should not, and I am going to stop it. Thank you. I yield back.

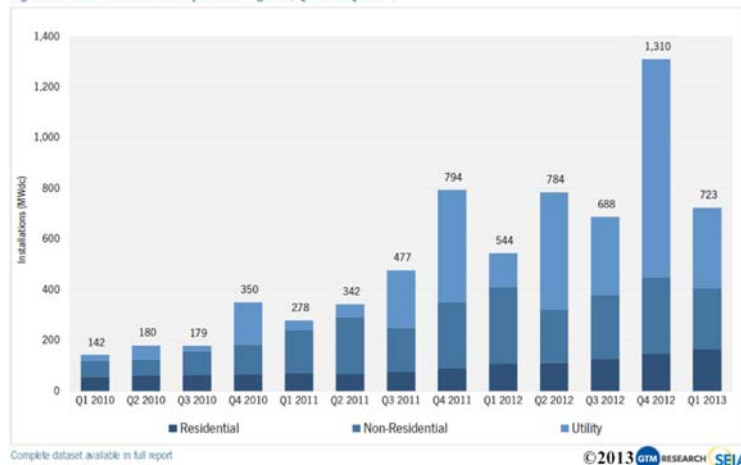
Chairman RYAN. Mr. McDermott.

Mr. MCDERMOTT. Thank you, Mr. Chairman. I started politics in the last energy rush. It was called nuclear energy. I was in the '70s in the state of Washington where the boom and bust of the Washington public power system left its mark. We are now in an energy rush here, and it is not surprising to hear the same oil and gas refrains. We have been giving them breaks since 1913, and if it were not for the harmful health and environmental effects of these fuels, it would make sense. But we know what CO₂ is doing, and the president has rightly proposed an all-above strategy.

Now, I would not advocate that we stop all drilling or abandon coal, but we have to mitigate the damage. I have proposed two bills that address these: a sensible carbon tax at the well head, or at the mine mouth; and a coal bill that would address the environmental and health costs of transporting coal all across the country to ship to the Chinese. But as we explore our options for America's energy future, I hope partisanship will not stand in the way and blind us to the president's message, and would be willing to look at all the options. We cannot let tradition or worse, special interests, dictate our interests.

Solar energy, we have heard it kicked around here, I am sorry Mr. McClintock left, and my friend is still sitting here, but is very much in our future. It is the cleanest and most abundant renewable energy source available. We put a slide up and if you look at those columns, the top part, the light blue part is the part of solar energy. That is the production, and it is growing. In the last few years, you have had exponential growth installed capacity by the colleague, and 2013 is on track to have another record year.

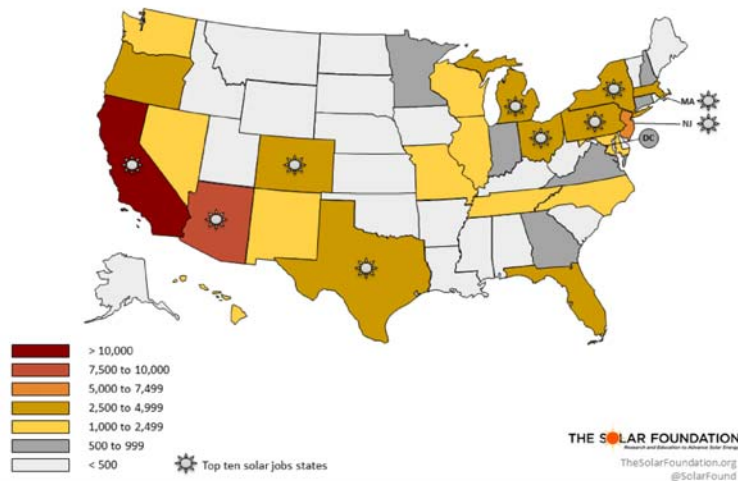
Figure 2.1 U.S. PV Installations by Market Segment, Q1 2010-Q1 2013



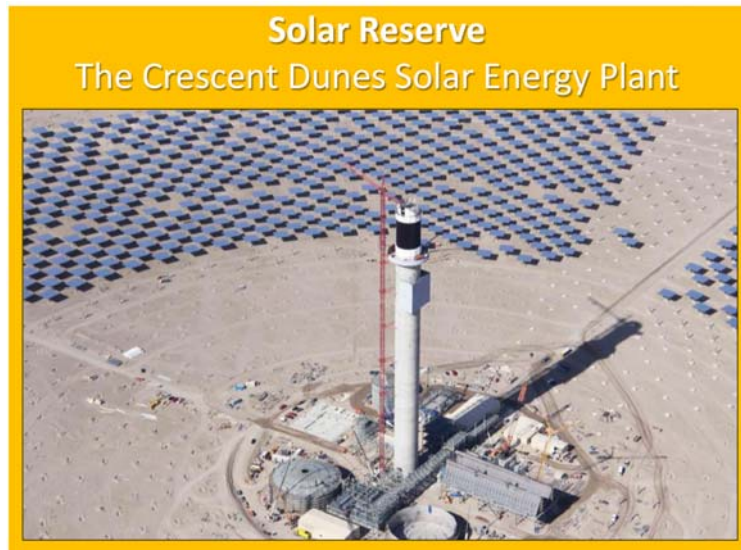
Now, right now, we have enough solar capacity to power more than 1.3 million average houses in this country. At the same time, costs are falling. The average price of solar panel has dropped 60 percent since 2011, and, not surprisingly, this growing industry is good economics. And you will see the second slide, in 2012, the solar industry poured more than 119,000 workers in the United States. That is up from 13 percent in 2011.

Solar Industry Puts People to Work in All 50 States

Solar Jobs by State



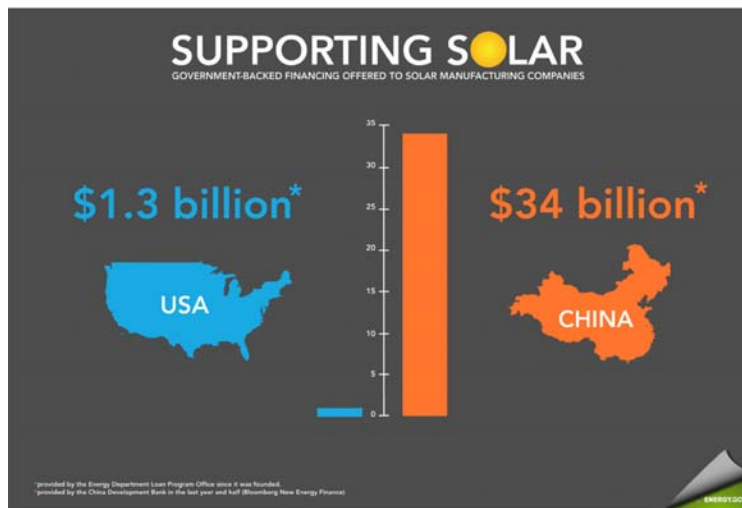
I also want to put another slide up there, and that one is for solar reserve. I heard this business about when the sun don't shine, there ain't no electricity from solar. That is not true. That is a myth.



We are proving it right in Tonopah, Nevada, which is very close to Mr. McClintock's district. Again, I am sorry he is not here. They are producing on-demand stored solar energy. At this plant, they have 600 workers on the ground, and have created 4,300 indirect and direct induced jobs. They generate more than \$73 million in

local and state taxes in their first 20 years of operation, and all in all, they will generate over \$750 million in private capital investments in Nevada. If growing the jobs is not enough then let's take the world seriously here.

Consider the next slide. China has invested \$34 billion in government-backed financing for solar manufacturing, as compared to our \$1.3. If you go to Beijing, on some days, you cannot drive your car because the air is so bad; they know what is happening, and they are reacting to it, and in the United States, we are sitting here sort of saying, well, we have got this natural gas thing, and it is great. Let's go for it. But it still produces CO₂, folks. It is not clean energy. It is not sustainable. It is not going to stop the growth of CO₂ in the atmosphere.



Now, I have a question, and I suppose, Mr. Durbin, it is really directed to you. Will you guarantee to Ms. Schwartz and I that there is no foreseeable detrimental health effects in the fracking process?

Mr. DURBIN. Mr. McDermott, I do not think any energy source can make that guarantee for you. What I can guarantee for you is that the industry has committed doing it safely and responsibly, and working with the governments at the state level and the federal level to make sure it is well-regulated.

Mr. MCDERMOTT. You do not want to work with this federal government. This Congress has tried to repeal EPA about two dozen times because they do not want to the federal looking at the world. And the fact is, you are trying to move down to the states where you know you can manipulate.

Mr. DURBIN. That is just not fair, Mr. McDermott. We have got federal laws that we have to follow for all of our production, okay. So, now, we do believe that the regulation is best done at the state level, but that does not mean there is no federal regulation. We have still got all kinds of federal laws that we have adhere to for every one of the wells that we drill.

Mr. McDERMOTT. Thank you, Mr. Chairman. We could have another discussion on this.

Chairman RYAN. Yes. Thank you for your question. Mr. Williams.

Mr. WILLIAMS. Yeah, Mr. Durbin. Thank you for being here. Appreciate what you are doing. I am from Texas. Barnett Shale, Eagle Ford, Cline are all normal names to us back home. I have seen what the industry can do as far as creating jobs and more taxpayers.

I, like so many of the people here, believe in all-of-the-above approach, an all-American approach. The difference is I believe the federal government has no role in it. I believe the private sector will decide where we need to be the next 25, 50, 100 years, and I offer you to continue to work on that so we do not have the Solyndras of the world fighting the fossil fuel questions.

I guess my question would be to you, Mr. Weiss. You know a lot about the industry. Have you ever been in the industry? Have you ever been in the private sector? Have you ever been on a rig?

Mr. WEISS. Yes, I have been in the private sector. No, I have not been on a rig, but my family, like yours, is in the auto business. I have a father-in-law and brother-in-law who are both auto dealers.

Mr. WILLIAMS. Well, you and I are probably going to agree on a lot of things then.

Mr. WEISS. I hope so.

Mr. WILLIAMS. You talked about the CAFE standards. Well, the CAFE standards, if they go to where this Administration wants them to go, will they create jobs or lose jobs?

Mr. WEISS. They will create jobs, according to studies that have been done.

Mr. WILLIAMS. So people continue to buy more expensive vehicles because of this?

Mr. WEISS. People will actually save money on their vehicles, \$8,000 over the life of a car, in lower gasoline purchases.

Mr. WILLIAMS. That is fine. Another question is you have talked about big oil. What should big oil make? You are concerned about the cash they have in the bank and their profits. What do you think big oil should make?

Mr. WEISS. I think every company in the United States ought to be entitled to a fair profit. But the big five oil companies in the last two years have made \$250 billion in profits. They are sitting on \$70 billion in cash reserves. They do not need \$2.5 billion a year from taxpayers in special tax breaks.

Mr. WILLIAMS. You talked about they need to pay more taxes. So you think their cash should go to the government rather than R&D, research and development, and that will create more jobs?

Mr. WEISS. They are not investing in R&D, sir, for the most part. They are investing some, a small amount, but a third of their profits go to buying back their own stock.

Mr. WILLIAMS. Let me tell you. This is America. Profit is a good word. Okay.

Mr. WEISS. It is. But they do not need tax breaks on top of the huge profits, sir.

Mr. WILLIAMS. The next question I have is why, since you are in the car business, why are electrical cars not selling versus gas-pow-

ered vehicles, and why has the government had to put so much subsidies to get them off the car dealers' lots? Why is that?

Mr. WEISS. Well, first of all, the sales of the plug-in hybrid Chevy Volt and the all-electric Nissan Leaf have outstripped the sales of the Prius and Insight, which were the first hybrid cars in America.

Mr. WILLIAMS. That is like saying 100 percent of nothing is nothing.

Mr. WEISS. Well, now, there is over a million of those cars on the road now. It is a startup technology that takes time.

Mr. WILLIAMS. But why is there government subsidy?

Mr. WEISS. Because there is a social benefit to our nation of using less oil.

Mr. WILLIAMS. Now, the next thing I want to ask you is, Apple makes more than big oil. What should their taxes be, and what should their cash in the bank be?

Mr. WEISS. I am not familiar at all with the finances of Apple, so I will let others address that.

Mr. WILLIAMS. Well, it is public. It is public, so maybe you can research that and get back with me.

Mr. WEISS. I will be happy to.

Mr. WILLIAMS. Living in Texas, I am unaware of any jobs created by wind, solar, bio, et cetera compared to oil and gas. How do the jobs created by those energy sources create to what we are creating in oil and gas?

Mr. WEISS. Well, first, I do not have the state-by-state numbers. Texas does get over 10 percent of its electricity from wind. It is important to note that the 1.6 million oil and gas jobs nationwide, according to Bureau of Labor Statistics, half of those jobs are people working in service stations.

Mr. WILLIAMS. But there is more people generated by oil and gas than the others, I think you would agree with me there.

Mr. WEISS. Right now, there is. But, remember, half of the 1.6 million are people working in service stations.

Mr. WILLIAMS. All right. Another question. Should the Keystone Pipeline be approved, and add 42,000 new jobs and create more taxpayers to help reduce the deficit?

Mr. WEISS. According to the State Department, Keystone Pipeline will create 35 permanent jobs, less than the roster on a football team, and only 3,500 temporary jobs.

Mr. WILLIAMS. Thirty-five permanent jobs?

Mr. WEISS. Thirty-five permanent jobs, according to the State Department. That is less than the roster of a football team.

Mr. WILLIAMS. I see. Well, should the pipeline be built? That was my question.

Mr. WEISS. I believe that it is all risk and no reward for the American public, as you know, Mr. Williams.

Mr. WILLIAMS. No, I heard you. Without the success of the energy industry, what would you think our economy would look like?

Mr. WEISS. The energy industry is incredibly important. But remember, there are costs to how we do business right now that are not being paid for: in healthcare costs, in premature deaths, in extreme weather events of a kind that hit Mr. Pascrell's district last year.

Mr. WILLIAMS. Well, okay, you know, do you think bio, wind, and solar could pay \$15 at McDonald's? Do you think it could create five-figure salaries to drive trucks? Do you think it could help build roads and give charitable contributions to the economy?

Mr. WEISS. Absolutely.

Mr. WILLIAMS. When?

Mr. WEISS. They are already doing it now. But they are new industries. They are growing. It is like oil and gas a hundred years ago.

Mr. WILLIAMS. I hope your family keeps selling. I yield back.

Mr. WEISS. Thank you very much.

Chairman RYAN. I just want to correct the record. There are 53 people on a football team in the NFL, all right?

Who is next? Mr. Cicilline.

Mr. CICILLINE. Thank you, Mr. Chairman. Mr. Chairman, I ask unanimous consent that my opening statement be included as part of the record.

Chairman RYAN. Yes.

Mr. CICILLINE. Thank you.

I think the witnesses for being here, and if I can put some of your testimony into a budget context, since this is the Budget Committee. Some of the testimony today argues that further domestic development of fossil fuels would generate dramatic increase in government revenues and reduce the deficit. For example, in his testimony today, Mr. Larson projected that federal and state government revenues could increase to about \$111 billion by 2020 with a pro-development strategy. But it seems to me that this projection fails to net out the costs associated with this strategy.

The National Academy of Science has estimated total non-climate change-related damages associated with energy consumption from fossil fuels, and more than \$120 billion annually, mostly derived from health and wellness issues caused by air pollution. In addition, the federal government spends billions of dollars to ensure against risks associated with climate change, invest in mitigation, and provide disaster assistance to industries affected by carbon pollution-related damages. In the last year, we have also lost revenues from industries like agriculture, fisheries, and tourism in regions that have been devastated by the effects of climate change.

So, I am wondering, Mr. Larson, if your forecast takes into account these very real costs associated with fossil fuel production, along with the potential increases in government revenues?

Mr. LARSON. Thank you for the question. So, first, let me just characterize the nature of our study was not pro-growth; it was on the current status quo of the current regulations as they stand today, so it was basically the development that we have currently seen today.

Mr. CICILLINE. But my question is, in the calculation, do you take into account the costs associated with this strategy?

Mr. LARSON. We include in the calculations the regulatory costs associated with the underlying activity that is required to ensure that activity is done in a responsible fashion.

Mr. CICILLINE. That is not my question. I am not talking about the regulatory costs; I am talking about the impact that we know

from places like the National Science Academy, the cost on health, on public health.

Mr. LARSON. So, yes. Those are externalities. Those are not included in this. But let me just say, the number you cited the tax revenues; that did not include the GDP impacts, or the other contributions from the industry.

Mr. CICILLINE. So, Mr. Weiss, in your estimation, if we include healthcare costs, these externalities, the economic damages, and the other externalities that I have just described, would increasing our reliance on oil and gas expand or reduce the federal budget deficit in the long term?

Mr. WEISS. Well, I would have to look at the numbers, but I think that, certainly, externalities need to be included. Interestingly enough, not including externalities, right now, wind and solar power are cost-competitive with new coal-fired or natural gas power. So the reason why there is a disparity is that the coal plants, which are very costly in terms of health damages, are 45 years old on average. They paid for their land. They paid for their facility. All they are paying for is their fuel and their labor, and so that is why there is this disparity in cost. But for new power, it is equal, not even including externalities. Thank you.

Mr. CICILLINE. Thank you. Now, staying within the budget context, I would like to talk for a moment about some of the benefits that we already provide the oil and gas industry. For example, at the first quarter of 2013, the big five oil companies are on pace to earn a combined \$120.8 billion in profits. And as my colleague said, I do not have any problem with people making profits, but according to the Joint Committee on Taxation, these same five companies pocket \$2.4 in tax breaks every year. And I know, Mr. Durbin, many of your members are smaller companies. Would you say that this subsidy to the most profitable oil companies is the most effective use of the taxpayer resources in order to promote your industry and your members?

Mr. DURBIN. I am glad you asked the question because there are no subsidies. That word keeps being used, but the companies involved, whether it is the big five, the big four, or everyone else here.

Mr. CICILLINE. I called them tax breaks.

Mr. DURBIN. Well, you also used the word subsidies.

Chairman RYAN. Let the gentleman answer your question.

Mr. DURBIN. Either way, these are provisions in the tax code that are available to all taxpayers, all average businesses. Even some of the legislation introduced earlier this year, you have time to offset sequester, you know, cuts by taking it out of some of the oil and gas industry. In each case, you look at where they went into the tax code, and whether it was Section 199, LIFO accounting, or the dual-capacity provisions, those are available to average taxpayers, average businesses, so it points out the fact that these are not special breaks for the oil and gas industry. These are widely available, and in the case of our member companies that are doing the natural gas production, the cost recovery is what is so critical to maintaining our ability to keep reinvesting in this country, creating those jobs, bringing cleaner energy.

Mr. CICILLINE. Well, I would like to close, Mr. Chairman, by saying the Budget Committee is responsible for examining the impact of energy policy, and it would have on a wide range of issues, and before we focus exclusively on expanding the fossil fuel industry, we should evaluate the real cost of carbon pollution, wasteful tax subsidies, and unused public land.

Chairman RYAN. Gentleman's time has expired. Mr. Lankford.

Mr. LANKFORD. Thank you. I need to just mention a couple things. It is the benefit of being here through a lot of the questions.

The thought of the Keystone Pipeline creating 35 jobs or 35,000 temporary jobs does not connect with the people in Seminole County where the southern part of the Keystone Pipeline is already under construction in my district. And I can take you to the restaurants, to the little Western wear store, to one business after another that is seen incredible impact of that, and the thought that you are going to have a 2,500-mile pipeline overseen by 35 people managed on the line, cutting trees, dealing with all the issues you have to do on managing the line, inspecting it, running the pig through; that you can do that with 35 people begs reality. And so there are issues that are there in the middle of all this. Also, the comment about the fact that energy companies are not doing a lot of R&D, they are doing a miniscule amount; Mr. Durbin, for the energy companies, how much R&D are they doing?

Mr. DURBIN. I do not have a specific number for you, but the oil and natural gas industry, for capital expenditures here in the U.S., larger than any other industry out there.

Mr. LANKFORD. Right. The last number that I saw is that the private oil and gas companies are doing 10 times the R&D on renewable fuels than what the federal government is, yet the federal government is the one that is always standing up saying they are doing all the research on it, but the majority of that research is actually being done by energy companies.

And also, this ongoing conversation that is happened today that is a comparison of "we do not get enough government revenue in this" overlooks the reality that the American people's revenue is what we are after. This sense that we cannot get enough federal tax dollars in from this, and so we should not do this, I think we should first look and say, the people in our districts all across America, will they benefit from this? Is energy less expensive for them? Will this help them afford gas? Will this help them afford groceries? Is this better for them and for their children long term? Those are questions that have to be answered as we go through this.

I am also astounded by the amount of conversation that has happened through the course of the day today that I want to be able to come back on. In 1979, Jimmy Carter, in his famous malaise speech, said we have got to get our nation off of oil and get to more coal usage. And so he made this big shift to saying we have got to use more coal. We have got to get off natural gas because we are running out of natural gas, so we can do that. He also, during that speech, promised that by the year 2000, with the policies that were set in place, by the year 2000, 20 percent of America's electricity would come from solar power. Mr. Larson, do you happen to know

the percentage of America, of our energy, that comes from solar power at this point?

Mr. LARSON. No, I do not have that number off the top of my head.

Mr. LANKFORD. Mr. Weiss?

Mr. WEISS. It is a little bit less than 1 percent, but remember, those policies were extinguished in 1981 with the next administration. So it is unfair to hold his speech to that standard.

Mr. LANKFORD. Well, I would be glad to be able to extend out his policies and to be able to show you all the details on that. It is not the issue of the policies; it is the technology. So to say if we had dumped more federal dollars in in 1981 that this technology would have come from the private sector, we are in the same boat right now. We are in a situation where I am not opposed to the use of all different types of fuels.

Mr. WEISS. Well, Iowa gets 20 percent of its electricity from wind.

Mr. LANKFORD. That would be great. How many acres would it take of solar and wind to get 20 percent of New York City's power from solar and wind?

Mr. WEISS. I have not looked at that, but, you know, we have got to also have transmission. That is important, too.

Mr. LANKFORD. Mr. Durbin, do you know how many acres it would take to be able to do 20 percent of New York City?

Mr. DURBIN. I do not know the number.

Mr. LANKFORD. Do you know how many acres it takes of solar or wind to be able to offset one natural gas power plant in the small scale?

Mr. DURBIN. It is significant, and that is the issue.

Mr. LANKFORD. It is about 20,000 acres. About 20,000 acres are needed to be able to replace one small natural gas power plant, and if you put a wind or a solar facility for gathering electricity, you also have to do a natural gas facility, or a coal facility, or something else. So you are not really replacing, you are just adding to it. You just took 20,000 acres of American land offline to do that. So this consideration of, you know, what do we do, one or the other? You also have to take in the reality of what do you do for land usage in the days ahead. How many acres do you really want to take offline on this?

Let me ask you a question as well. Mr. Durbin, what is your thought about exporting of natural gas?

Mr. DURBIN. Well, I think it is a great question, and the fact that we now have such an abundance of natural gas here is the only reason we can even have the discussion about whether or not we should be exporting LNG. And I think there is no question we should be exporting LNG. As I mentioned in my testimony, it is a good sign that DOE has now approved two permits for export facilities. Our preference is, you know, approve all of them that meet the criteria. Now let the market figure it out how many are going to be built. And let's provide this as another outlet to help us with balance of trade and creating jobs here, both for the facilities themselves, for the production, provides greater certainty to the producers themselves. So I think we stand in a very strong position

to be, you know, a global natural gas, you know, provider, especially to our allies.

Mr. LANKFORD. Thank you. I yield back.

Chairman RYAN. Thank you. Mr. Huffman?

Mr. HUFFMAN. Thank you, Mr. Chairman. I have waited around here not because I have any searing probative questions of the witnesses, but rather to express a little bit of dismay as a freshman member of Congress and of this Committee. The testimony that we have heard, the statements that we have heard today are very familiar to me. In fact, it is *deja vu* over and over and over again because I am also a member of the Natural Resources Committee, and we have seen this theater in hearing after hearing in that committee, where witnesses from the oil and gas industry are brought in, and in the face of all sorts of irrefutable fact, they talk about how there are all these problems with this Administration's energy policy that are holding back growth.

When we actually look at the fact, and hear from people like CRS that have used the right baselines and benchmarks, we know irrefutably that production is up, that times, frankly, in this industry have never been better. Profits are up. We are on the verge of becoming an energy net exporter for the first time in a generation because of the policies that we have had in place under this Administration. And yet we continue to have these pep rallies for the oil and gas industry while real problems are simply, for some reason, off the table. We do not even have a conference committee so we can move forward and try to negotiate a federal budget, but we are here to have a pep rally for the oil and gas industry who is experiencing record profits.

We have got student loan interest rates about to double in less than a week, but we are not talking about that, and the overhang of that rising student loan indebtedness on our economy. We are talking about something that has the public leases that might be made available would have a tangential, at best, effect on our economy because we already have all sorts of public leases that are not even being used under the policies of this Administration. We are not talking about any number of things like the sequester and the people that are actually suffering. We are here to talk about folks who are experiencing record profits.

So I guess I just want to express dismay as a member of Congress who would like to see this body solving problems instead of rehashing these type of pep rallies for highly-profitable industries that we have seen in the Natural Resources Committee. We will go on this week to have a similar experience with a bill to expand oil and gas drilling off our coast and in the Arctic that has no chance of becoming law, and in the face of all that theater, there are real problems that we need to be solving, we need to be working together.

And I just want to express my hope that the next time we come together, we might be able to talk about something like the budget. We might be able to have conferees that can actually go to work on getting things done. We might be able to talk about solutions to the student loan indebtedness problem, or maybe even the real costs that some of our failed energy policies are foisting on the federal government, such as the fact that we are experiencing more

severe weather incidents that have costs of greater than a billion dollars than ever before, and the federal share of picking up the tab for that is rising very dramatically. We do not ever seem to talk about things like that.

So I would invite any of the witnesses who perhaps want to speak about the cost of a failed climate policy and an energy policy that has swung too far in the direction of carbon emissions and fossil fuels.

Mr. WEISS. Thank you, Mr. Huffman. In the last two years, the United States has experienced 25 extreme weather events that each caused at least \$1 billion worth of damages for a total price tag of \$188 billion, and that also includes 1,100 fatalities. During this time, the federal government spent \$136 billion in disaster relief and recovery. Meanwhile, we spent only \$22 billion, or about \$1 for every six for recovery, to help make communities more secure from future extreme weather events. So it has a huge impact both on our economy and on the federal budget.

Mr. HUFFMAN. Thank you. I yield back.

Chairman RYAN. Thank you. Mr. Rokita?

Mr. ROKITA. I thank the Chairman. I thank the witnesses for coming today. It has been very educational. I appreciate it. One of the programs that I have started in my office is called Red Tape Rollback, and it is my commitment to focus on what I see as the second Constitutional duty of Congress, equally important to passing laws, and that is to oversight the executive branch, and particularly in terms of regulations. So this Red Tape Rollback program allows me to account to my voters and taxpayers for what we are doing in that regard.

And one company in particular comes to mind during this discussion. It is called Buzzi Unicem USA. It is in Greencastle, Indiana, and they are a cement plant. And they burn probably 100,000 tons of coal per year, and in doing so, create something called fly ash. Now fly ash is valuable. They reuse it. Yet the EPA has recently started hearings to regulate fly ash. You know, if the regulation is carried out, this would cause this company to have to ship this fly ash out, which is inherently less safe than if they burned it and reused it safely within the plant.

So this is expensive. It costs jobs, it makes electricity more expensive. So to Mr. Durbin and Mr. Larson, I would ask, and I know at least one of you is an expert in natural gas, but what other regulations are out there that come to mind that are hurting jobs and costing more, making this cost more for energy? Mr. Durbin?

Mr. DURBIN. Well, Mr. Rokita, not to cite specific regulations.

Mr. ROKITA. No, I would like you to, if you know of any.

Mr. DURBIN. Well, but, and I will have to play a little bit of the new person card, having just started at ANGA in the last two months, but, again, our members are directly involved in the productions, in the exploration of productions, you know, both on public lands and private lands. So, you know, clearly, they have been very focused on BLM rules with regard to the hydraulic fracturing that are still, you know, being proposed, and as we have talked about, you know, earlier, just some of the permitting opportunities for us to streamline that permitting process. So, I mean, that is where I would put it.

Mr. ROKITA. Okay. And then, now, your testimony does talk about that, but would you mind getting more specific with me as you get more comfortable with the job, and reply in writing so I can work on some of these?

Mr. DURBIN. I'd be happy to. Sure.

Mr. ROKITA. Thank you. Mr. Larson, do you have anything to add?

Mr. LARSON. No, I think as our study looked at, we basically looked at sort of the processes that they have currently have unfolded, and we feel that with the current regulatory system that is in place, you know, the opportunities that we see now are being managed responsibly and can unfold in that path. So I could not point to any specific regulations at this time that I feel would need to change.

Mr. ROKITA. Mr. Larson, sticking with you, as you may know, the recent city report estimated that increased energy production and the associated benefits will increase real GDP from 2 to 3.3 percent by 2020, above what would have otherwise been the case over the same period. Familiar?

Mr. LARSON. Yes.

Mr. ROKITA. Do you have any estimates on how increased production will affect GDP?

Mr. LARSON. Yes, our estimates are in a similar range, so we are seeing a similar impact to GDP. You know, the interesting thing will be really looking at how the trade will unflow, and how much that will impact GDP. Obviously, GDP net trade and imports are a key component of that GDP number, so as we looked at it, we sort of looked at a very similar number by 2020, and a lot of that will be driven by both the domestic manufacturing resurgence and our trade positions that we will enjoy.

Mr. ROKITA. Okay, I appreciate it. I yield back.

Chairman RYAN. Mr. Woodall?

Mr. WOODALL. Thank you, Mr. Chairman. I appreciate it. Mr. Weiss, it was actually your testimony earlier that brought me back to the hearing today, and I appreciate it.

Mr. WEISS. I am glad to hear.

Mr. WOODALL. If you are wondering if you had an impact today, you absolutely did on me. A couple of things. I noticed in your testimony that you said between 2008 and 2012, non-hydrorenewable energy resources doubled in that period of time.

Mr. WEISS. Correct.

Mr. WOODALL. My recollection is that our hydro resources, though, dwarf all of those other renewables combined.

Mr. WEISS. Yes. Right now renewables are, I think, slightly more than 4 or 5 percent of our total electricity generation. Hydro, I believe, is about 8 or 9 percent of our electricity generation.

Mr. WOODALL. And do you know how much our hydrogeneration capability grew over that same period of time?

Mr. WEISS. I am not under oath, so I will say I believe it was static, but I would have to check.

Chairman RYAN. We can swear you in if you'd like.

Mr. WEISS. I am sorry? No, that is okay.

Chairman RYAN. All right.

Mr. WOODALL. I believe it was static also.

Mr. WEISS. Yes. Although the president, you know, yesterday, I believe, in his plan proposed to increase hydroelectric generation from existing dams.

Mr. WOODALL. From existing dams?

Mr. WEISS. That is correct.

Mr. WOODALL. I think one of my great frustrations, I am, you know, a conservative Republican from the deep south. Nobody plays outside more than I do, and I am not embarrassed to talk to folks about environmental protection issues because, again, no one is more interested in protecting the Chattahoochee National Recreation Area than those of us who live and play along the Chattahoochee National Recreation Area. Again, my recollection is we are a net energy importer today, still bringing in oil from around the globe. Thinking about our collective concern about climate change, are you aware of any nation from who we are importing oil that does a better job of environmental protection than we do here in the States?

Mr. WEISS. Well, I do not believe so, because the three biggest importers are Canada, Mexico, and Saudi Arabia, and I believe that we have a better regime in many ways, although Canada has stricter power plant rules, and I believe they are phasing out their coal-fired power plants in Canada. So I would have to say Canada does in some areas.

Mr. WOODALL. So when it comes to where we are going to develop new exploration, if we care about protecting the earth together, it seems to make sense that we would do more exploration, more production here, North America, the U.S. and Canada, so that we would be less dependent on folks that we know do not do it in as an environmentally-sensitive way as we do, but when I read through the testimony, I do not see your support for doing those things, again, that we can agree we do better than anybody else does.

What I found in two and a half years in Congress is we tend to focus on those things that divide us. I have always said, "Get me to energy independence, and I will talk about whatever mix of energy you want to do, but until we get to energy independence, I know I am importing it from people who care less about the planet than I do." Why can we not get together on doing that production here that we know will do it in an environmentally-sensitive way up until we get to that energy independence threshold?

Mr. WEISS. You know, I totally agree with you, Mr. Woodall, and, in fact, I think we ought to be able to agree that, let's develop our oil resources in the Gulf of Mexico in places that are already open where 70 percent of the leases that are held by oil companies are not being developed. Well, let's have, as Mr. Markey has proposed, a "use it or lose it" policy. Let's have them either, you know, they get the leases, you know, do their exploration to see if there are resources there, have them develop them. If not, they lose the leases.

Mr. WOODALL. And tell me about that. Again, for folks who agree on the need to protect the planet, why is it more desirable to encourage BP to develop in this currently undeveloped lease lot than to develop in this as yet unleased lot? If it is going to be new development in either case, why would we not leave it to oil and gas pro-

fessionals to develop in whatever the areas there are where they believe those fields will be most productive?

Mr. WEISS. Well, the good news is, it is like really setting in the banks, it is because that is where the oil is. You know, the Department of Energy said the vast amount, I believe it is about three-quarters, a little bit less, of our offshore oil resources are already open for development, and companies already have leases on them, but they are not developing them. Let's get them to develop them, or give back the leases so somebody else can.

Mr. WOODALL. But allowing them to lease more areas for more development disadvantages the environment how?

Mr. WEISS. Because places, like in the bill that is going to be considered on the floor of the House, is going to open up development into very economically-sensitive areas, and areas, for example, off the coast of Virginia where we also have a national security interest in being able to make sure that our ships from the Norfolk Naval Yard are able to do their military exercises and whatnot. So let's focus where the development already is.

Chairman RYAN. Ms. Blackburn.

Mrs. BLACKBURN. Thank you, Mr. Chairman. I thought it was interesting. Mr. Huffman talked about having a pep rally. I think that some of us need to be having a pep rally for the American worker, and for American jobs, and for American energy independence around this place. I do not understand this negative attitude that some people bring to these Committee hearings. Good Lord, have mercy.

As vice chair of the Energy and Commerce Committee, I look at the issues you are dealing with, and I have a couple of specific questions I want to get answered and on the books. But Mr. Weiss, I am going to come to you. Mr. Markey is supporting the use it or lose it policy. You know, a lot of people could not activate into those leases because of lawsuits. Would you favor doing away with environmentalists being able to throw these lawsuits on those that are trying to do exploration work that have these leases?

Mr. WEISS. Absolutely not, because these are waters that belong to all Americans, not just those who lease for the resources underneath it.

Mrs. BLACKBURN. Resources do belong to all Americans. You are exactly right. So what ties up the hands of so many of these oil companies is the fact that you have got these environmentalists who go out here, and they sue, sue, sue, sue, sue to get what they want, to slow progress, and to cause the expenditures of hundreds of thousands of dollars in fighting these lawsuits over years and years and years. So, therefore, it is not something that could be done in an expedient or an affordable manner.

Mr. Durbin, has energy production increased on federal land under this Administration or not?

Mr. DURBIN. Well, again, as the Chairman pointed out in his opening statement, we have seen production go down on federal lands during this Administration.

Mrs. BLACKBURN. Okay, I think that it has gone down by about 6 percent; in natural gas production, it has declined about 21 percent. Is that correct?

Mr. DURBIN [affirmative].

Mrs. BLACKBURN. Okay. Mr. Weiss, did you have something you wanted to add?

Mr. WEISS. Yes, if you do not mind. Thank you. That is not correct. According to the Energy Information Administration, oil and gas production from offshore and public lands is higher in all four years of this Administration.

Mrs. BLACKBURN. That was not my question. It was federal land production.

Mr. WEISS. That is what I said. Federal lands and waters.

Mrs. BLACKBURN. Federal lands.

Mr. WEISS. Oh, federal lands only? It has also been higher than the previous administration. I would be happy to submit this for the record if you would like.

Mrs. BLACKBURN. I think that you should submit it to the record because what we have is that it has declined 6 percent, and that natural gas has declined 21 percent. And then let's talk about private land, what the production has done on private land under these policies.

Mr. DURBIN. Well, again, as we discussed earlier in the hearing, I think that, you know, we have seen private and state land production increase significantly, and that is, again, not only the resource being there, but the certainty of the regulatory process and the streamlined permitting that allows the industry to, you know, to get in and produce these lands.

Mrs. BLACKBURN. Okay, thank you.

Mr. LARSON. It is up 36 percent on non-federal lands.

Mrs. BLACKBURN. On non-federal lands?

Mr. LARSON. That is correct.

Mrs. BLACKBURN. Mr. Larson, one of the things that we hear at Energy and Commerce in the Commerce Manufacturing and Trade Committee is people who are offshore in manufacturing or have had to offshore would like to bring that back on shore. They are concerned about IP protections or lack thereof in certain components of the world, and they would love to come back with that. So talk to me a little bit about natural gas prices and the impact that that is having on domestic manufacturing, what you are seeing there.

Mr. LARSON. Yes. So domestic natural gas prices, basically, you could look at them as roughly a third, on average, of our global competitors, and so it is creating a strong resurgence in manufacturing, and as you point out, there are a lot of different reasons right now behind this. I would characterize what is going on domestically with our natural gas prices as a necessary but not sufficient component to onshoring. It is something that if you look at the various components of a desire to protect IP, desire to shorten supply chains, a desire to have production near end markets so that you can speed your research and development, and you look at sort of tax regulations and other factors as well as energy, all of those combined have sort of developed in a way now that with this energy opportunity and lower costs, it is really contributing this now breakeven point where you are seeing onshoring return. And we do see a significant increase in the industrial production, particularly in those energy-intensive industries, the chemicals, the

petrochemicals, the downstreams. And so those will really be the forerunners of this manufacturing renaissance in this country.

Mrs. BLACKBURN. Thank you. Mr. Chairman, I yield back.

Chairman RYAN. Thank you. Dr. Price. Oh, yeah, that is right. Ms. Walorski.

Mrs. WALORSKI. Thank you, Mr. Chairman. Thank you, gentlemen, for your remarks today. My question kind of goes back to what the Chairman was asking when we were talking about manufacturing jobs in places in the Midwest. I am from Indiana, and coal plants in Indiana are the heart of Indiana's economy; provides almost 90 percent of Indiana's electricity. Almost 30 percent of Indiana's GDP is from manufacturing. This is dependent upon coal-fire/electric generation. So when we talk about jobs in the state of Indiana, we are right smack dab in that situation. I am talking about coal, primarily coal.

So based upon what the president talked about yesterday, what technology is there that is in place today to allow coal plants to keep operating while meeting new emission standards that will be mandated by the president's new energy proposal? Anybody? Go ahead.

Mr. WEISS. Well, first, I just want to say that my wife is an alumni of Indiana University.

Mrs. WALORSKI. All right, she is a Hoosier.

Mr. WEISS. She is a Hoosier and I am a Wolverine, so sometimes we battle during basketball season.

Mrs. WALORSKI. That is great conversation.

Mr. WEISS. But in any event, the technologies that exist today that could help companies reduce their emissions is energy efficiency because some utilities, like Duke Energy, are helping their customers use less electricity, which, in fact, reduces emissions. So that is existing technologies today that could help them reduce their carbon pollution.

In addition, we have, in the past, supported investments in carbon capture and storage technology that would help companies burn coal 85 to 90 percent cleaner, but, unfortunately, they are very expensive. You know, the Waxman-Markey Bill that passed four years ago today, as someone pointed out, would have included billions of dollars to help subsidize the development and commercialization of carbon capture and storage technology for big coal plants, but, unfortunately, because that did not become law, there has been really no money besides what was in the Recovery Act that has helped subsidized that.

Mrs. WALORSKI. Let me ask you this. In the state of Indiana, we have coal gasification. And coal gasification, at the time, was state of the art, breakthrough technology, and still, we use it today. Do you see coal gasification being able to pass the test of the new emissions in the Obama plan?

Mr. WEISS. Well, the Obama plan basically does not exist yet. What he did yesterday was say, "We are going to start to develop that plan." But yes, coal gasification can have a role. In addition, there is a technology called co-firing, where you take some biomass, twigs, leaves, and all of that stuff, and add it to your coal, and that will also reduce emissions. So yes, there is an array of technologies. One other technology that exists that will help reduce emissions is

investments in solar and wind electricity because that is another technology that exists today. It is cost-competitive right now compared to new coal or natural gas plants, and it will also help reduce emissions.

Mrs. WALORSKI. Well, my concern still, though, is jobs because these are gigantic; when you are speaking of these costs, these are gigantic costs. And when we talk about these kinds of costs in a place like Indiana, we are talking about huge jobs and a huge degradation in jobs. We are also talking about, we have one of the lowest utility rates in the nation, which has helped us become, really, the fifth state in this entire nation on job creation.

So my concern is back to this issue of overregulation. In a state that is a manufacturing state, in a place where you are driven by coal, how in the world does a state like ours survive with an overreaching hand into regulation? Because, I mean, from anybody's perspective, have not we seen, and have not we seen from what you guys have studied, that overregulation continues to decrease jobs in places like manufacturing?

Mr. WEISS. Actually, it has not. The Bureau of Labor Statistics looks at this every quarter, and the last quarter that they have data for found that for the 400,000 new unemployment claims that were filed, I believe 726, or less than two-tenths of 1 percent, were due to government regulation of any sort: environmental, health.

Mrs. WALORSKI. Sorry to interrupt, but I would say those two-tenths of 1 percent have been streaming into my office, and they are all from the state of Indiana, because I have heard all of them. Mr. Durbin?

Mr. DURBIN. Well, again, I am obviously here on behalf of the natural gas industry and have nothing to say against the coal-powered plants, and I understand and acknowledge the need for us to have a diverse fuel portfolio for power generation. But I will say that, you know, natural gas does provide another opportunity here to have not only an abundant, affordable fuel source that is going to be able to provide, you know, the power for all of that manufacturing in Indiana, but also with reduced emissions.

Mrs. WALORSKI. Yeah, I appreciate it. Mr. Larson?

Mr. LARSON. I think we have not looked at the proposals around the coal, obviously, but I think there are two important points I would just illuminate on. The first is, obviously, any time you take capital and retire it, there is a loss to society from the early retirement of capital that has to be quantified and evaluated. That is the first.

The second thing is there is clearly a value in power generation diversity, and when you look the ability to commit to different fuel switching as hedges against price shocks is a very important component of our power gen capability that we have inherited today, and it is an important thing to evaluate in any policy that would change that diversity.

Mrs. WALORSKI. Thank you. Thank you, Mr. Chairman.

Chairman RYAN. Thank you. Dr. Price.

Mr. PRICE. Thank you, Mr. Chairman, and I want to thank you for holding this hearing. I think it is hugely important. This nation has been blessed with remarkable resources, and the fact that policymakers, some policymakers in this town, do not want to utilize

those in a responsible, environmentally-sensitive way to the benefit of all citizens is really astounding.

Our friends on the other side talk about them having an all-of-the-above energy plan, and the president having an all of the above energy plan, and that may be technically accurate. The problem is it is none of the below. Nothing do they desire below the ground, and so the challenges that we have got can be met with the remarkable resources that we have, but we are not being able to utilize them.

I think it was Mr. Rokita who asked you, Mr. Weiss, about why, maybe it was Mr. Woodall, why not open up new offshore leases, and he says, "Well, the reason that the current leases ought to be utilized because that is where the oil is." Mr. Weiss, do you have any idea how much production, energy production, oil production, was in South Dakota 15 years ago?

Mr. WEISS. No, but I do know that 20 percent of their electricity now is from wind energy.

Mr. PRICE. That was not the question. That is all right, though.

Mr. WEISS. Well, you asked me about energy production in South Dakota, and that wind energy electricity did not exist.

Mr. PRICE. Mr. Weiss.

Mr. WEISS. Sorry. Sorry. Go ahead.

Mr. PRICE. The jobs that have been created in South Dakota, the remarkable ability of that state to turn around its economy, it has been phenomenal, phenomenal with the use of resources. The fact of the matter is we did not know 15 years ago what kind of energy resources there were in South Dakota, in North Dakota. And the fact is that we do not know what is off the shore either. But there are people who do, and they say that there are great opportunities there to be able to utilize the remarkable resources that are offshore in an environmentally-sensitive way, in a positive way, to not only bring about energy production, but to create jobs and to improve the economy.

Can you pull up the slide, because I want to talk very briefly about the Keystone Pipeline because I think the number of jobs that it would create and the amount of revenue that it would bring in to the federal government is remarkable. These are current pipelines in the United States, oil pipelines underground. Mr. Weiss, do you know which one is the Keystone Pipeline?

Current U.S. Oil Pipelines



Mr. WEISS. Well, it is hard to see because my eyes are getting bad, but I believe it would show the southern leg from Cushing, Oklahoma down to the Gulf Coast, which is under construction. The northern leg is not under construction, so it ought not be on that.

Mr. PRICE. The fact of the matter is that Keystone does not show up there.

Mr. WEISS. Right, that is what I said.

Mr. PRICE. Yeah, because it had not been built yet. But the important point of this slide is that look at the number of pipelines that are under land right now. We have got an opportunity to gain significant increase in job creations, significant increase in the ability to refine North American fuel, and we are letting it stand by the wayside, not because, not because there is an environmental problem. There is a political problem. In fact, Keystone was accepted all the way up every single chain of the policy side in this Administration until it got to the political question, and then they said, "No, we cannot do that." And the nation understands that. The nation understands that this Administration is blocking job creation and blocking energy production in this country for political reasons; not policy reasons, political reasons.

Mr. Larson, I am amazed by those who do not talk about the economics of this situation as well, right now with offshore energy production being significantly limited. And there is a recent study that, I believe by Wood Mackenzie, that says that the policies that promote domestic development of oil and natural gas including access to offshore federal areas that have been kept off-limits could create 1 million new jobs and generate \$127 billion in revenue to the federal government. You talked about GDP. Would you touch on the revenue creation for the federal government if we were to open up these areas?

Mr. LARSON. We have not looked at all these offshore potentials. I will say that we did a study that looked at the Gulf of Mexico in particular, and found just the Gulf of Mexico in what is currently under development down there, it is contributing about 560,000 jobs and \$70 billion a year in annual revenue. So, you

know, that just gives you an idea of the scale of what the offshore opportunity looks like from an economic context, but we have not looked at the other areas that are under question for opening up.

Mr. PRICE. And the economic benefit to the United States of increasing domestic energy production, fossil fuels, as long as it is done in an environmentally-sensitive way is real, correct?

Mr. LARSON. It is. I mean, so you can look at where we were, the roughly 1.8 million barrels in unconventional oil that we could develop last year, probably about \$70 billion in offset for imported oil. So that drops right down to your bottom line of your GDP, and, obviously, it is allowing us to meet domestic demand and fuel domestic jobs to meet that demand.

Mr. PRICE. Thanks, Mr. Chairman. Makes sense for workers, makes sense for the government.

Chairman RYAN. Thank you. This is very helpful. I appreciate the numbers we have been presented to the Committee. It is very illustrative of what the potential is. We need some more perspective like this because the CBO has been a little low on the numbers, from what we can tell. I appreciate the perspective from the industry, and I appreciate the perspective from your community as well, Mr. Weiss. So thank you very much, everybody, for this hearing. Hearing is adjourned.

Mr. WEISS. Thank you for having me.

[The prepared statement of Mr. Cicilline follows:]

PREPARED STATEMENT OF HON. DAVID N. CICILLINE, A REPRESENTATIVE IN
CONGRESS FROM THE STATE OF RHODE ISLAND

Thank you Mr. Chairman. First, I want to thank our witnesses for being here today to discuss a wide range of topics related to our nation's energy policy.

If I can, I'd like to put some of your testimony into a budget context. Some of the testimony today argues that further domestic development of fossil fuels would generate dramatic increases in government revenues and reduce the deficit. For example, in his testimony, Mr. Larson projected that federal and state government revenues could increase to about \$111 billion by 2020 with a "pro-development strategy".

On the surface, this looks like a potential way we could shrink our nation's budget deficit. But I wonder if this projection is really taking into account the billions of dollars in costs associated with carbon pollution and the already tremendous subsidies we provide to fossil fuel companies both through our tax code and access to our public lands.

After all, the Budget Committee is responsible for examining the impact any energy policy would have on a wide range of costs, across the federal government.

First, it may be useful to discuss some of those hidden, external costs that result from a singular focus on increasing fossil fuel production. For example, in 2010, the National Academy of Sciences estimated total non-climate change related damages associated with energy consumption at more than \$120 billion in one year. And this is non-climate change related, meaning it is mostly the result of health and wellness costs.

We know air pollution leads to higher rates of mortality and respiratory problems. As a result, the federal government oftentimes picks up the tab for hospital admissions, increased expenditures on medications and many other health costs associated with carbon pollution.

In addition, the economic damages associated with fossil fuel emissions and the resulting changes in our climate are far-reaching. Carbon pollution has imposed real costs on many natural industries, including our nation's fisheries and agricultural economy.

Damages from climate change also impact our tourism economy and the resilience of businesses. Just ask local businesses on the Jersey Shore still recovering from Hurricane Sandy or folks affected by the BP Oil Spill in the Gulf of Mexico. Let's not forget that the federal government spends billions of dollars to insure against these risks, invest in mitigation and provide assistance to industries affected by climate change related damages.

These are the real costs associated with a fossil fuel development strategy. And it comes on top of the \$120 billion in health care and other non-climate change related costs.

Any honest budget projection should account for these real, tangible costs. The numbers demonstrate that it may be worse for the bottom-line than you seem to imply.

In addition, a constant, singular focus in Congress on expanding our fossil fuel capabilities has led to some real waste. For example, after the first quarter of 2013 the big five oil companies are on pace to earn a combined \$120.8 billion in profits. And yet, according to the Joint Committee on Taxation, these same five companies pocket \$2.4 billion in tax breaks every year.

In addition, last year the Department of Interior issued a report assessing how many federal lands leased for oil and gas development remain idle. The amount of waste is staggering. Out of 36 million acres leased offshore, only about 10 million acres are active meaning 72% of these acres are fully idle. Onshore, an additional 20.8 million acres, or 56% of leased acres, are not active. Moreover, approximately 7,000 approved permits have not yet been drilled. These lands are an important, tangible asset.

In the end, focusing so intensely on promoting additional development of fossil fuels has prevented us from diligently monitoring the investments both in terms of land and tax subsidies that we are providing the oil and gas industry. And it is preventing us from truly evaluating the costs associated with carbon pollution.

I hope, today, we can assess the budgetary impact of further oil and gas production thoughtfully, honestly, and with a real understanding of the math and facts on the ground. If we do that, I think we will all come to the conclusion this is a bad deal.

[Additional submissions of Mr. Van Hollen follow:]

June 20, 2013.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

H.R. 2231: Offshore Energy and Jobs Act

As ordered reported by the House Committee on Natural Resources on June 12, 2013

SUMMARY

H.R. 2231 would revise existing laws and policies regarding the development of oil and gas resources on the Outer Continental Shelf (OCS). It would direct the Department of the Interior (DOI) to adopt a new leasing plan for the 2015–2020 period, require auctions of leases in certain areas in the Atlantic and Pacific OCS, and reduce the department's discretion regarding which regions would be included in future lease sales. Under this bill, some of the offsetting receipts from leases issued in newly available areas would be spent, without further appropriation, to make payments to states. Finally, H.R. 2231 would direct DOI to collect fees from certain firms that operate in the OCS and to implement various administrative reforms.

CBO estimates that enacting H.R. 2231 would reduce net direct spending by \$1.5 billion over the 2014–2023 period. Pay-as-you-go procedures apply because enacting the legislation would reduce direct spending. In addition, CBO estimates that implementing the bill would cost \$40 million over the 2013–2018 period, assuming appropriation of the necessary amounts. Enacting this bill would not affect revenues.

H.R. 2231 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

ESTIMATED COST TO THE FEDERAL GOVERNMENT

The estimated budgetary impact of H.R. 2231 is shown in the following table. The costs of this legislation fall within budget functions 950 (undistributed offsetting receipts) and 300 (natural resources and the environment).

[By Fiscal Year, in Millions of Dollars]

	2014	2015	2016	2017	2018	2014–2018
CHANGES IN DIRECT SPENDING^a						
Estimated Budget Authority	–55	–70	–90	–265	–190	–670
Estimated Outlays	–55	–70	–90	–265	–190	–670

[By Fiscal Year, in Millions of Dollars]

	2014	2015	2016	2017	2018	2014–2018
CHANGES IN SPENDING SUBJECT TO APPROPRIATION						
Estimated Authorization Level	5	15	15	5	3	43
Estimated Outlays	1	14	15	7	3	40

a. CBO estimates that enacting H.R. 2231 would reduce direct spending by \$1,515 million over the 2014–2023 period.

BASIS OF ESTIMATE

For this estimate, CBO assumes that H.R. 2231 will be enacted near the beginning of fiscal year 2014 and that the necessary amounts will be appropriated for each fiscal year.

Direct Spending. CBO estimates that enacting H.R. 2231 would reduce net direct spending by \$1.5 billion 2014–2023 period. That estimate reflects the budgetary effects of provisions that would change the terms and procedures governing the OCS leasing program, authorize direct spending for payments to states, and require firms to pay annual fees for federal inspections of their operations in the OCS.

Payments for OCS leases and the proceeds from inspection fees would be recorded in the budget as offsetting receipts, which are treated as a reduction in direct spending. Because oil and gas production usually occurs several years after a lease is issued, CBO expects that most of the estimated increase in offsetting receipts over the next 10 years would result from bonus bids and rental payments. Most royalty collections associated with those leases would occur in later years. Such estimates are subject to considerable uncertainty, however, because the legislation would affect leasing activity in areas that have not been available for oil and gas development for more than 25 years.¹

OCS Leasing Activity. H.R. 2231 would revise DOI's current leasing plan for the OCS and limit the department's future discretion in determining where and when auctions for access to those leases should occur. CBO estimates that implementing those changes would increase gross offsetting receipts by \$1.2 billion over the 2014–2023 period above the amounts expected under current law.

Under current law, most OCS leasing decisions are made administratively—in consultation with industry and states—for five-year planning periods. H.R. 2231 would reduce that administrative discretion by requiring DOI to auction leases for at least half of the available acreage in areas that the government estimates to contain certain quantities of oil or gas resources. In addition, the department would have to conduct three specific lease sales within two years of enactment: one off the coast of Virginia, one off the coast of South Carolina, and another for leases in the Santa Barbara and Ventura basins in the California OCS that could be developed by using existing offshore facilities or from onshore drilling sites. Finally, DOI would be required to adopt a new leasing plan for the 2015–2020 period that would replace the current leasing plan for the 2012–2017 period.

Leasing in the Atlantic and Pacific OCS. Enacting H.R. 2231 would primarily affect leasing activity in the Atlantic and Pacific OCS. CBO estimates that implementing the bill would increase gross offsetting receipts from leasing in those areas by about \$1.0 billion over the next 10 years relative to our most recent baseline estimate of receipts under current law. This estimate of receipts attributable to the legislation reflects CBO's expectation that such leasing would generate proceeds of about \$1.8 billion over fiscal years 2014 through 2023 under the bill.² However, CBO expects a portion of that amount—\$0.8 billion—will be collected under current law. CBO's baseline estimate is less than the amount we estimate from enacting H.R. 2231 for two reasons. First, the current leasing plan for the 2012–2017 period does not include any auctions in the Atlantic and Pacific OCS. Second, the prob-

¹For more information about factors affecting OCS leasing activity, see Congressional Budget Office, Potential Budgetary Effects of Immediately Opening Most Federal Lands to Oil and Gas Leasing, August 2012. <http://go.usa.gov/bQwH>

²CBO's estimate of the receipts from leasing in the Atlantic and Pacific OCS are roughly proportional to the bonus bids that CBO expects will be collected over a comparable period of time for regions in the Central and Western Gulf of Mexico and the Beaufort and Chukchi Seas in Alaska, which are available to be leased under current law and policy. The estimate also assumes that the pace of leasing would be consistent with past trends for areas with undiscovered resources that are geologically dispersed over large areas. Finally, based on the conclusions of a 2011 report sponsored by the American Petroleum Institute, CBO assumes that the amounts paid by bidders per barrel of oil equivalent (BOE) for resources in the Atlantic and Pacific would be about half the amounts expected to be paid for resources in the Arctic National Wildlife Refuge or the Eastern Gulf of Mexico.

ability of such leasing occurring after 2017 under current law is uncertain because federal and state administrative policies toward leasing change over time.

Leasing in Other OCS Regions. H.R. 2231 also would affect leasing in areas that are temporarily unavailable because of statutory or Presidential restrictions. The Gulf of Mexico Energy Security Act of 2006, for example, prohibits leasing of about 4.4 million acres in the eastern and central Gulf of Mexico until June 30, 2022. In addition, the Bristol Bay area in the North Aleutian Basin in Alaska was withdrawn from consideration through 2017 by the President. CBO estimates that requiring auctions after such restrictions expire would increase gross offsetting receipts by about \$0.2 billion over the 2018–2023 period. Most of that increase is estimated to result from additional leasing activity in the Gulf of Mexico in fiscal year 2023.

CBO estimates that enacting H.R. 2231 would have no effect on proceeds from areas that are included in the current leasing plan for the 2012–2017 period because DOI routinely auctions more than half of the available acreage in those areas. Those areas include the central and western Gulf of Mexico and the Beaufort Sea, Chukchi Sea, and Cook Inlet in the Alaska OCS.

Receipt Sharing. H.R. 2231 would authorize certain payments to states affected by OCS activities in areas that would be made available for leasing by this bill and that are outside the central and western planning areas in the Gulf of Mexico. Under H.R. 2231, the percentage of lease payments paid to states would depend on the location and timing of the lease sales. For example, Virginia, South Carolina, and California would receive 37.5 percent of the gross proceeds from the three auctions specified in the bill. Elsewhere, states would receive a 12.5 percent share of the gross proceeds from eligible leases issued under the five-year plan that would take effect in 2015; 25 percent from leases issued under the subsequent five-year plan; and 37.5 percent from leases issued thereafter.

CBO estimates that the receipt-sharing provisions in H.R. 2231 would increase direct spending by \$0.3 billion over the 2014–2023 period. That estimate reflects CBO's expectation that such payments would be limited to leases issued in areas that are not included in DOI's current leasing plan for 2012–2017, such as the Atlantic and Pacific OCS. Under this bill, funds would be disbursed to states the year after receipts are collected.

Inspection Fees. H.R. 2231 would direct DOI to collect annual fees to cover the cost of inspecting OCS facilities and drilling operations, subject to certain conditions. The bill would specify the amounts due for various types of activities and would allow DOI to adjust those fees for inflation in future years. Amounts collected under the bill would be deposited in a new fund in the U.S. Treasury and would be available to DOI if appropriated in annual appropriation acts. DOI's authority to collect the fees would expire at the end of fiscal year 2022.

Based on information from DOI, CBO estimates that collecting the inspection fees in H.R. 2231 would increase offsetting receipts by about \$0.6 billion over the 2014–2022 period, after adjusting for inflation. The appropriation act for fiscal year 2013 authorized DOI to assess and collect similar inspection fees, but that authority expires at the end of this fiscal year. For this estimate, CBO assumes that the inspection fees authorized by H.R. 2231 would take effect in fiscal year 2014 and extend through fiscal year 2022.

Spending Subject to Appropriation. CBO estimates that implementing H.R. 2231 would cost about \$40 million over the 2014–2018 period, assuming appropriation of the necessary amounts. Based on spending patterns for similar activities, CBO estimates that DOI would spend about \$32 million over the 2014–2018 period to develop a new five-year plan and complete the environmental, geologic, and economic assessments associated with conducting lease sales in new areas.

In addition, H.R. 2231 would establish two new executive positions at DOI, an Under Secretary and an Assistant Secretary, who would oversee the development of mineral resources on federal lands. The bill also would require the agency to administer drug tests for certain employees who do work related to DOI energy programs. Based on information regarding the salaries for executive positions and support staff within the federal government and the cost of providing drug tests at other federal agencies, CBO estimates that implementing those provisions would cost about \$1 million a year over the 2014–2018 period.

Other provisions would codify organizational changes that were implemented by DOI in 2012, subject to certain modifications. Although the duties of the bureaus created by the bill would be similar to those established under current law, H.R. 2231 would assign different names to two of the three entities. Based on information from DOI on the cost of the previous reorganization, CBO estimates that implementing those name changes would cost a total of about \$3 million over the next

five years because the agencies' websites, regulations, and administrative personnel materials would need to be formally modified.

Finally, CBO estimates that implementing H.R. 2231 would have no significant effect on the discretionary cost of inspecting OCS operations over the 2014–2018 period but would change the budgetary treatment of certain inspection fees. In recent years, the authority for DOI to collect fees for OCS inspections was provided in annual appropriation acts, and the proceeds were netted against the discretionary appropriation. Under H.R. 2231, the proceeds from such fees would be treated as a reduction in direct spending until the fee provisions in the bill expire at end of 2022.

PAY-AS-YOU-GO CONSIDERATIONS

The Statutory Pay-As-You-Go Act of 2010 establishes budget-reporting and enforcement procedures for legislation affecting direct spending or revenues. The net changes in outlays that are subject to those pay-as-you-go procedures are shown in the following table.

CBO ESTIMATE OF PAY-AS-YOU-GO EFFECTS FOR H.R. 2231

[As ordered reported by the House Committee on Natural Resources on June 12, 2013]

	By fiscal year, in millions of dollars												
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2013–2018	2013–2023
NET INCREASE OR DECREASE (–) IN THE DEFICIT													
Statutory Pay-As-You-Go Impact	0	– 55	– 70	– 90	– 265	– 190	– 155	– 155	– 155	– 140	– 240	– 670	– 1,515

INTERGOVERNMENTAL AND PRIVATE-SECTOR IMPACT

H.R. 2231 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments.

ESTIMATE PREPARED BY:

Federal Costs: Kathleen Gramp (OCS leasing activities); Jeff LaFave (DOI reorganization)

Impact on State, Local, and Tribal Governments: Melissa Merrill

Impact on the Private Sector: Amy Petz

ESTIMATE APPROVED BY:

Theresa Gullo

Deputy Assistant Director for Budget Analysis

July 11, 2013.

Hon. CHRIS VAN HOLLEN, *Ranking Member,*

House Committee on the Budget, 210 Cannon House Office Building Washington, DC 20515.

DEAR RANKING MEMBER VAN HOLLEN: Thank you very much for the opportunity to testify at the Budget Committee hearing on “America’s Energy Revolution: A New Path to Jobs and Economic Growth” on June 26th. I was honored to be included in this important discussion, and I thought that the hearing was very productive.

Several committee members raised questions about domestic oil and gas production from federal lands and waters. I would like to submit the following information for the hearing record that addresses these questions.

The Energy Information Administration report “Sales of Fossil Fuels Produced from Federal and Indian Lands, FY 2003 through FY 2012” determined that oil production from federal lands and waters has been higher during every year of the Obama administration compared to 2008, the last year of the Bush administration.¹ The average annual oil production from federal areas is also higher under President Obama compared to President Bush. EIA reports that from 2009–2012 oil production from federal lands and waters averaged 648.8 million barrels per year compared to

¹ Energy Information Administration, “Sales of Fossil Fuels Produced from Federal and Indian Lands, FY 2003 through FY 2012,” (2013), available at <http://www.eia.gov/analysis/requests/federallands/pdf/eia-federallandsales.pdf>.

an annual average of 623.5 million barrels from 2003-2008—a four percent increase during the current administration.

CRUDE OIL PRODUCTION FROM FEDERAL LANDS AND WATERS, FY 2003–FY 2012

Year	Crude oil & lease condensate (millions of barrels)
2003	679
2004	670
2005	638
2006	571
2007	618
2008	565
2009	647
2010	723
2011	629
2012	596

Source: Energy Information Administration²

Although natural gas production on federal lands has been lower under President Obama compared to President Bush, it is because newly available shale gas resources are largely on state and private lands.

In 2012, Adam Sieminski, the administrator of the Energy Information Administration, testified before the House Energy and Commerce Committee that:

Because the shale resource basins are largely outside of the Federal lands, so too is shale production. In this case, the geology is working in favor of non-Federal land-owners.³

Additionally, an assertion was made during the hearing that the process for approving oil and gas permits on federal lands has become longer. A 2013 Congressional Research Service analysis “U.S. Crude Oil and Natural Gas Production in Federal and Non-Federal Areas” examined this concern. CRS determined that the process has significantly improved under the current administration.

In 2006 it took the BLM [Bureau of Land Management] an average of 127 days to process an APD [application for drill permit], while in 2011 it took BLM 71 days. In 2006, the industry took an average of 91 days to complete an APD, but in 2011, industry took 236 days.

Some critics of this lengthy timeframe highlight the relatively speedy process for permit processing on private lands. However, crude oil development on federal lands takes place in a wholly different regulatory framework than that of oil development on private lands. * * * a private versus federal permitting regime does not lend itself to an ‘apples-to-apples’ comparison.⁴

If you have any questions about this information or my testimony, please contact me. Thank you again for the opportunity to present our views before the House Budget Committee.

Sincerely,

DANIEL J. WEISS,

Senior Fellow and Director of Climate Strategy.

cc: Chairman Paul Ryan; Hon. Honorable Marsha Blackburn

[Whereupon, at 12:09 p.m., the committee adjourned subject to the call of the Chair.]



² Ibid.

³ Adam Sieminski, Testimony before the Subcommittee on Energy and Power of the Committee on Energy and Commerce, August 2, 2012, available at <http://www.eia.gov/pressroom/testimonies/sieminski-08022012.pdf>.

⁴ Marc Humphries, “U.S. Crude Oil and Natural Gas Production in Federal and Non-federal Areas,” (Congressional Research Service, 2013), available at <http://energycommerce.house.gov/sites/repUBLICANS.energycommerce.house.gov/files/20130228CRSreport.pdf>.